THE LAW OF THE SEA TREATY AND REAUTHORIZATION OF THE DEEP SEABED HARD MINERAL RESOURCES ACT

ARING

BEFORE THE

SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

OF THE

COMMITTEE ON MERCHANT MARINE AND FISHERIES HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

THE POTENTIAL FOR U.S. RATIFICATION OF THE LAW OF THE SEA TREATY AND BENEFITS AND DISADVANTAGES OF SUCH RATIFICATION

THE NEED FOR REAUTHORIZATION OF THE DEEP SEABED HARD MINERAL RESOURCES ACT AND POSSIBLE REVISIONS TO THIS ACT

APRIL 26, 1994

Serial No. 103–97

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THE LAW OF THE SEA TREATY AND REAUTHORIZATION OF THE DEEP SEABED HARD MINERAL RESOURCES ACT

TUESDAY, APRIL 26, 1994

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF, COMMITTEE ON MERCHANT MARINE AND FISHERIES,

Washington, DC.

The Subcommittee met, pursuant to call, at 2:07 p.m., in room 1334, Longworth House Office Building, Hon. Solomon P. Ortiz [chairman of the Subcommittee] presiding.

Present: Representatives Ortiz, Hughes and Fields, ex officio.

Staff Present: Tom Kitsos, Chief Counsel; Sue Waldron; Press Secretary; Robert Wharton, Senior Professional Staff; Sheila McCready, Staff Director; John Aguirre, Legislative Clerk; Terry Schaff, Professional Staff; Katie Hornbarger, Sea Grant Fellow; Judy Wilson, Staff; Chris Mann and Shelley Cole, Full Committee Professional Staff; Harry Burroughs, Minority Staff Director; Cynthia Wilkinson, Minority Chief Counsel; Lisa Pittman, Full Committee Minority Counsel; Richard Russell, Subcommittee Minority Counsel; and Margherita Woods, Chief Minority Clerk.

STATEMENT OF HON. SOLOMON ORTIZ, A U.S. REPRESENTATIVE FROM TEXAS, AND CHAIRMAN, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

Mr. ORTIZ. The hearing will come to order.

Good afternoon. I would like to welcome all of you here today on behalf of the Subcommittee on Oceanography, Gulf of Mexico and the Outer Continental Shelf.

Today the Subcommittee meets to examine the Law of the Sea Treaty and the Deep Seabed Hard Mineral Resources Act. The Law of the Sea was opened for signature in 1982 and will enter into force on November 16 of this year.

Although the United States has never signed the treaty, primarily because of objections to the deep seabed mining provisions contained in Part XI, there have been extensive efforts on the part of the negotiators from the United States and other industrialized nations to address these objections. Resolving these issues would allow the United States to ratify the treaty prior to its entry into force.

At the same time, the Deep Seabed Hard Mineral Resources Act is up for reauthorization on September 30 of this year. This statute was enacted in 1980 as an interim measure to protect U.S. access to seabed minerals and to provide greater certainty to U.S. mining companies interested in deep seabed mining.

The focus of this hearing is twofold. First, the Subcommittee would like to receive information on the current status of the negotiations related to the Law of the Sea Treaty's deep seabed mining provisions, the potential for U.S. ratification of the treaty, the benefits and the disadvantages of the U.S. ratification, the effect of ratification on U.S. domestic law and the need for implementing legislation.

Second, the Subcommittee would like to hear about the need for reauthorization of the Deep Seabed Hard Mineral Resources Act, possible revisions to the statute, the Act's status given Law of the Sea Treaty negotiations and potential U.S. ratification of the treaty and potential authorization funding levels and the time periods.

In addition, we would like to gain some insight into the state of scientific understanding regarding the effects of mining on the deep seabed environment. In particular, we would like to hear about what scientific information is required to make sound managerial decisions when seabed mining becomes feasible and what changes in the Deep Seabed Act may be necessary to ensure that such information is available in a timely manner.

We have a number of highly qualified witnesses here today to provide information on these issues. Again, I welcome all of you here today and look forward to your testimony. I would like to welcome the Ranking Member of the Subcommittee, my good friend Mr. Fields, and yield to him for his opening statement.

STATEMENT OF HON. JACK FIELDS, A U.S. REPRESENTATIVE FROM TEXAS, AND RANKING MINORITY MEMBER, COMMITTEE ON MERCHANT MARINE AND FISHERIES

Mr. FIELDS. Thank you, Mr. Chairman. I appreciate your holding this timely hearing on the recent negotiations of the seabed mining provisions on the Law of the Sea Treaty and the related reauthorization of the Deep Seabed Hard Mineral Resources Act. And suffice it to say as the senior member on the Committee, very rarely do I actually come and participate in our Subcommittee hearings; however, I have been intimately involved with deep seabed mining issues since my early days as a freshman Member of Congress.

In fact, I am proud to say that I have been one of the leading congressional opponents of the Law of the Sea Treaty from the beginning. I led the fight against ratification. I was instrumental in our Nation's negative vote on the treaty and continue to be concerned about the implications of this new international regime and what this could mean to our country.

The United Nations Law of the Sea Treaty will enter into force on November 16, 1994. Thus far, the United States and all the other industrialized countries have refused to sign the treaty based on what I believe are the well-founded objections to the seabed mining regime found in Part XI.

Sadly, however, the United States seems to have abandoned these legitimate concerns during the recent U.N.-sanctioned discus-

sions. By endorsing the outmoded concepts found in Part XI, including the support of a huge international bureaucracy, the bankrolling of a U.N. seabed mining competitor and the domination of mining interests by those who have little stake in the matter, I think we have created a Frankenstein monster of a natural resources regime, a monster that could well serve as a terrible model for Antarctica, outer space, and the moon.

This is a bad deal for the United States Government and our taxpayers. My views have been echoed by prominent scholars and I ask that the hearing record include several articles that point out the serious deficiencies in the existing Part XI regime.

Mr. ORTIZ. Hearing no objections, so ordered.

[The information can be found at the end of the hearing.]

Mr. FIELDS. The U.N.-sanctioned discussions have resulted in recommended changes to Part XI, which have been included in the document known as the "Boat Paper". Supposedly, the changes were made to protect the interests of those countries who have made substantial investments in seabed mining and who are large consumers of seabed minerals. While some progress has been made to address some of the major concerns, I am not convinced that the fundamental problems have been addressed or solved by these particular negotiations.

The benefits to the United States by ratifying the treaty as it stands now are, at best, minimal. The United States already has taken the position that all the other parts of the Law of the Sea Treaty represent customary international law and we act accordingly. For example, President Reagan declared a 200-mile exclusive economic zone off our shores in 1983 and extended our territorial sea from 3 to 12 miles in 1988.

Frankly, there was no reason to have signed this badly flawed treaty in the 1980's and even less justification today. In 1980, when it was clear that the United States and its allies would not sign the treaty, Congress enacted the Deep Seabed Hard Mineral Resources Act. This statute regulates the mining activities of U.S. citizens in the seabed beyond the jurisdiction of any country.

The National Oceanic and Atmospheric Administration, which administers the Act, has issued four licenses to U.S.-led consortia to conduct exploration activities in the Pacific Ocean. These licenses expire in 1999.

In addition, NOAA has been participating in environmental studies to determine the impact of actual seabed mining on the ocean floor. NOAA has also been involved in negotiations with other countries whose mining claims have overlapped U.S. claims.

At this time, Mr. Chairman, I would like to put the remainder of my statement in the record. I think I am spending a great deal of time, but I do want to stress that I look at this as being a very serious issue that has some real ramifications on the future security and strategic interests of this country.

So when someone asks, is it worth fighting a treaty that many deem to be esoteric, the answer is: Absolutely. I think this sets a terrible precedent. The concerns that I had when I was a freshman Member of Congress still exist. I have the same commitment that I had back in the 1980's in fighting this particular concept. And I repudiate what some people think should be the norm today: being

a citizen of the world. I am not a citizen of the world. I am a citizen of the United States of America. And I am very proud to be a Texan. And I am elected to represent the interests of my State and my country.

And so it is an emotional issue for me and I am going to promise to those assembled that I am going to do everything possible, first of all, to see if there is a prospect of the treaty being improved so that the security and strategic interests of this country are advanced. If not, then I am going to dedicate myself, along with others, to do everything we possibly can to stop what I think is fundamentally flawed.

Thank you, Mr. Chairman.

[The remainder of Mr. Fields' testimony follows]:

The Deep Seabed Hard Mineral Resources Act expires on September 30 of this year. I believe it is imperative that we reauthorize the Act to provide legal certainty to those licensed under the Act, to give the United States a strong negotiating position in any further U.N. discussions on the Law of the Sea Treaty, and to provide a framework for implementing legislation should the United States agree to ratify the Treaty at a later date.

I am not alone in supporting reauthorization of the Act. Many of the participants at a NOAA-sponsored workshop on reauthorization, some of whom are witnesses here today, join me in strongly supporting reauthorization of the statute. I ask that a copy of the proceedings from this workshop also be entered into the record.

With your support, Chairman Ortiz, I hope that we will be able to move a reauthorization measure soon. Perhaps, we can add this measure to the NOAA authorization legislation when it is scheduled for consideration before the House of Representatives.

Again, thank you, Mr. Chairman, for scheduling this important hearing. I think the time is ripe to highlight the behind-the-scenes negotiations on the Law of the Sea Treaty, and to focus our attention on what the Treaty really means for the United States and our seabed mining interests.

I look forward to hearing from the witnesses today, and I want to welcome my good friend, Conrad Welling, who is one of the pioneers in seabed mining and is in our audience today.

Thank you, Mr. Chairman.

Mr. ORTIZ. Thank you. I would like to include unanimous consent to include the statement from the Ranking Member, Mr. Weldon, who couldn't be here with us. And I think that there are some other members who have other commitments and their statements will be included for the record.

[The statement of Mr. Weldon follows:]

STATEMENT OF HON. CURT WELDON, A U.S. REPRESENTATIVE FROM PENNSYLVANIA, AND RANKING MINORITY MEMBER, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

Mr. Chairman, let me begin by complimenting you and our distinguished Full Committee Ranking Member, Jack Fields, for taking on the complex issues surrounding the Law of the Sea Treaty (LOST). I am also pleased that as part of this hearing, the Subcommittee will receive testimony on the reauthorization of the Deep Seabed Hard Mineral Resources Act (DSHMRA).

On November 16, 1994, LOST will enter into the force. To date, the United States, along with all of the world's other major industrialized powers, have declined to sign the Treaty.

For the United States, the chief concern is the seabed mining regime outlined in Part XI of the Treaty. Although seabed mining is currently not economically viable, the ocean's mineral resources are considered significant by a number of U.S. companies.

Currently, four U.S.-lead consortia hold licenses for exploration activities in the mid-Pacific. These licenses were issued under the authority granted to the National Oceanic and Atmospheric Administration (NOAA) by DSHMRA, which governs mining activities of U.S. citizens in international waters.

I look forward to hearing from today's distinguished witnesses on both LOST and reauthorization of DSHMRA. With the United States now leaning toward signing the Treaty, it is critical that we fully understand LOST's long-term implications for future U.S. claims to potentially valuable resources.

Mr. ORTIZ. My good friend from Texas is the Ranking Member of the Full Committee. I apologize. I was thinking about Mr. Weldon. He is a good Texan, too.

I would like now to introduce the first panel which consists of three representatives of the Federal Government. First, we will hear from Ambassador David Colson, the Deputy Assistant Secretary for Oceans at the U.S. Department of State. He is accompanied by Wesley Scholz, the Director of the Office of International Commodities at the U.S. Department of State.

And our second witness is Dr. David Evans, the Senior Scientist of the National Ocean Service at NOAA.

And then we will also hear from Captain Richard Schiff, Assistant Judge Advocate General for Civil Law at the Department of the Navy.

Before we begin, I would like to remind the witnesses that their entire written testimony will be included for the record and to try to limit your oral statement to 5 minutes as indicated by the lights on the witness table.

Ambassador Colson, you may begin when you are ready for your testimony.

STATEMENT OF AMBASSADOR DAVID COLSON, DEPUTY ASSISTANT SECRETARY FOR OCEANS, U.S. DEPARTMENT OF STATE, ACCOMPANIED BY WESLEY SCHOLZ, DIRECTOR, OFFICE OF INTERNATIONAL COMMODITIES, U.S. DEPARTMENT OF STATE

Ambassador COLSON. Thank you, Mr. Chairman. And thank you, Congressman Fields, for the challenge that you have given us. I appreciate the opportunity to testify today on the Law of the Sea Convention on behalf of the Administration. And as you noted, I am accompanied by Wes Scholz of the Department's Economic Bureau who was our principal negotiator for the last few years in the context of the U.N. discussions, and he will be able to answer any specific questions that you might have about the content of the emerging agreement.

I do hope that opponents of the treaty, such as Congressman Fields, will give us a chance to really explore whether the agreement that is emerging is something that will satisfy the United States, whether it satisfies us today, whether it might have satisfied us indeed during the Reagan Administration when we so strongly opposed the convention.

I do believe that I can report to you today that the United States is closer than ever before to achieving a comprehensive, widely ratified Law of the Sea Treaty that covers all aspects of ocean use. This has been an objective of the United States since the 1950's and we have gone through three United Nations conferences in an effort to try to achieve that result.

In the 1970's, the United States induced the beginning of the Third United Nations Conference on the Law of the Sea and through a 10-year negotiating effort, we came out with the 1982

Law of the Sea Convention. All succeeding Administrations have held that convention to be the cornerstone of U.S. ocean policy. But not withstanding that support, we have been unable to bring the Convention to the Congress for its consent because the management regime that the Convention established for the management of deep seabed hard mineral resources has been unacceptable to the United States.

My prepared testimony, Mr. Chairman, goes through a wide long list of the benefits of the Convention. There are 320 articles, nine annexes. It is a very comprehensive treaty and I won't go through all of the list of benefits.

I want to emphasize an important point—it is a point of continuity in United States ocean policy. The United States has tried to develop a constitution for the oceans since the 1950's that would govern all countries and that would apply to all ocean uses.

Most of the Convention that we now look at was, indeed, negotiated during the Carter Administration, and that Administration's negotiator, Ambassador Elliot Richardson, at the end of his negotiating tenure, testified before this Congress on the inadequacies of the text that we then saw in the convention. The Reagan Administration, when it came into office, made clear, as Congressman Fields has suggested, the United States' objections to the convention. Yet, the relevant treaty part, which we call Part XI, was not fixed in subsequent negotiations. The negotiations were brought to a close in 1982 with this flawed text in place, and the convention was adopted over the formal objection of the United States.

I recount this to emphasize the United States' consistent support for the nonseabed provisions of the convention and our consistent opposition to Part XI of the text as it emerged from the 1980 negotiations.

And again I won't recount all of the difficulties that we saw in that 1982 text.

In the late 1980's, a number of developments created circumstances which caused the Secretary General of the United Nations to undertake consultations with a view to seeing if solutions could be found to the outstanding objections to the convention now clearly expressed by many major countries. The changing political environment following the waning of the Cold War and the explosion of interest in free market reforms in developing countries in Asia, Latin America, within Eastern Europe and the states of the former Soviet Union were important factors leading to this climate of change.

Other important factors were the decline in commercial interest in deep seabed mining, and, as well, there was the matter that the convention was moving toward entry into force. Against this backdrop, developing country spokesmen began to speak out on the need for an accommodation. The Secretary General's consultations began during the Bush Administration and a fair amount of progress was achieved in those consultations in identifying conceptual approaches to solving our problems with the seabed mining provisions.

Early in the Clinton Administration, an interagency review concluded that overall United States interest in the convention would

be best served by taking a more active role to exploit this opportunity to seek change and to make the regime acceptable to us.

Progress has been swift. The most recent round of consultation earlier this month nearly completed work on an agreement that will fundamentally change the seabed mining regime of the convention. The institutional structure that we have complained of in the past has been reduced in size and substantially revised. The new regime will provide the United States and other industrialized countries with influence which is commensurate with our interests.

It will ensure that market-oriented approaches are taken to the development of the resources of the seabed. It will establish at the outset and recognize the seabed mine site claims established on the basis of the exploration work already conducted by the United States and other companies. And it will study the potential environmental impact of seabed mining.

Very quickly, Mr. Chairman, I would like to just identify a few of the very, very fundamental changes that have been made. I think these are really quite amazing when you look at where this effort to reform this convention started and where it has come out, because, I think we really can say, if we were back in 1982 or 1983, and were bringing this result before a different administration, we would have had to seriously consider whether these changes met its standards. And I think if we go back and look at the standards that were set by the Reagan Administration, we see that the emerging agreement that is beginning to come forth is going to meet those standards.

We see now that we will have a guaranteed seat in the decision-making body. The absence of a guaranteed seat was a main complaint we had in 1982. The agreement will allow the United States and two other countries, two other industrialized countries, to block decisions in the council.

Again, this need to ensure that we are not disadvantaged in the voting mechanism is a key point. We can ensure that all of the important decisions will be taken in fora where we have this voting power. We are going to establish a finance committee which will effectively give us budgetary responsibility and control over all of this bureaucracy that we have complained about in the past.

We have ensured through the deletion of the relevant provisions of Part XI that future amendments to this regime could not be adopted over United States' objections. The transfer of technology provisions which were a key point again in 1982, have been eliminated. They are gone. We have eliminated the power of the organization to limit the production from the seabed to satisfy land-based producers. This again was a key point in 1982 and all of that has been withdrawn.

We have grandfathered in the seabed mine site claims by the three U.S.-led multinational consortia on terms no less favorable that those granted to Japan, France, Russia, India and Chinese claimants. We have eliminated the annual large fees that the miners have complained about. We have remodeled this enterprise, this operating arm, that the mining industry complained about as being an international entity that would compete with commercial enterprises.

This has been modified by first requiring that a future decision which we can control is required before this enterprise will ever be operational.

It will be subject to all of the same requirements as other commercial entities. We have eliminated the requirement that parties to the convention fund this enterprise. We have provided that it will operate through joint ventures and we have eliminated the provisions that would compel other commercial enterprises to provide technology to it.

We believe that this is quite an advance. The negotiations are not quite yet finished, but they may be concluded by this summer. If so, then the final text of the agreement will need to be evaluated before a formal decision by the Administration is made to sign it. However, the Administration's preliminary evaluation of the text is that it is favorable and we believe that it does satisfy our primary objectives and it establishes an international mining regime for the seabed that meets the basic concerns of the United States.

I will stop there, Mr. Chairman. We will be happy to answer any questions that you might have.

[The statement of Ambassador Colson can be found at the end of the hearing.]

Mr. ORTIZ. Thank you, very much, Ambassador.

Dr. Evans.

STATEMENT OF DR. DAVID EVANS, SENIOR SCIENTIST, NATIONAL OCEAN SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Mr. EVANS. Thank you, Mr. Chairman, Mr. Fields and members of the Subcommittee. I am happy to appear here this afternoon to address NOAA's role as defined by the Deep Seabed Hard Mineral Resources Act and NOAA's views of its future activities under that Act.

The Deep Seabed Hard Mineral Resources Act was enacted in 1980 to create a stable domestic legal regime under which U.S. citizens could continue to conduct seabed mining development and exploration activities, to encourage negotiation of a broadly acceptable Law of the Sea Treaty and to provide a smooth transition from a domestic regime to an acceptable international regime.

Under the Act, NOAA is responsible for issuing licenses for exploration; issuing permits for commercial recovery; monitoring the diligence and activities of the permittees; conducting environmental research, designating, in consultation with the Secretary of State, as reciprocating States, foreign nations for mutual recognition of licenses and permits; and participating in efforts leading to and implementing an acceptable international legal regime for seabed mining.

During 1984, NOAA issued exploration licenses to four U.S.-based, multinational consortia for sites in the near-Equatorial North Pacific Ocean. The four consortia had performed considerable research and development on the technologies needed to recover manganese nodules from water depths of 4,000 to 5,000 meters and to process them into economically important products.

During May of 1993, the Kennecott Consortium surrendered its license to NOAA because of a change in business strategy and con-

cerns over the future legal regime for commercial operations. During June of 1993, Oceans Minerals Company (OMCO) applied for the license for the Kennecott area. Currently, the efforts of the licensees have been scaled back pending indications that metal markets, particularly for nickel, are recovering.

NOAA has been at the forefront of deep seabed environmental research since 1972. Research has included monitoring the licensees' at-sea tests. Also, NOAA has conducted in cooperation with other agencies and the State of Hawaii, research into the possible onshore impacts of manganese nodule processing and other associated activities. Although there are still uncertainties regarding potential effects on tuna larvae, the overall significance of upper water column effects was considered to be low in NOAA's 1981 Final Programmatic Environmental Impact Statement. The major uncertainties remaining were associated with the effects of the near bottom sediment plume which will be generated by the device which collects the nodules.

Because the sediment is so fine, the plume's effects such as covering food supplies or clogging respiratory surfaces of filter feeders, could be widespread. Because of this, NOAA began investigating the effects of the plume in a multiyear, multinational Benthic Impact Experiment (BIE).

In the BIE, NOAA is using a Deep Seabed Sediment Resuspension System to simulate the plume that would be generated by a nodule collector. During August and early September of 1993 the equipment was used to generate the sediment plume in the research area.

NOAA's plan is to return to the research area during June 1994 to measure the pattern and the depth of the burial achieved and to take biological samples in the impact area and a nearby control area. Beyond this, NOAA plans to have a thorough scientific review later this summer of this research before deciding on its future course of action.

We are being cautious about the resources that can be committed to the deep seabed mining because of the many other demands which compete for resources in the agency. Also, if various technologies change between now and the time the commercial operations are feasible, the present research results may become obsolete. NOAA will be reviewing relevant technologies and will reconsider its environmental research program based on this possibility and when the future of industrial development is more clear.

Under the Act, NOAA has continuing authority to process the exploration license application from OMCO and to monitor the activities of the licensees. NOAA intends to conduct these activities using base resources without further appropriations under the Act.

With respect to an international regime, NOAA has supported the Act's goal of achieving a universally acceptable Law of the Sea Convention.

The Act indicates congressional views regarding elements of an acceptable seabed mining regime. We defer to the mining industry witnesses to describe their views on the treaty and the renegotiation efforts, and you have heard from the State Department about progress to date. NOAA will limit its comments to the relationship

of the Act to any agreement which is reached during the modification of the Convention.

The Act was designed as an interim measure serving both as a secure basis for continuing activities and as a bridge for smooth transition to an international agreement. If the current negotiations are successful, the United States will still need this bridge until the modified Convention is ratified and enters into force with respect to the United States

In reviewing the Act, it appears that no near-term changes would be required if an acceptable agreement was to be concluded.

In response to the Subcommittee's question regarding potential authorization funding and time periods, NOAA cannot take a position on funding levels beyond fiscal year 1995. However, as noted previously, we have continuing authority under the Act to conduct the activities which are necessary and we intend to do so using our base resources.

Mr. Chairman this concludes my testimony and I thank you for the opportunity to give NOAA's position. And I would be glad to answer any questions that you might have.

[The statement of Mr. Evans can be found at the end of the hearing.]

Mr. ORTIZ. Thank you.

Captain Schiff.

STATEMENT OF CAPTAIN RICHARD SCHIFF, ASSISTANT JUDGE ADVOCATE GENERAL FOR CIVIL LAW, DEPARTMENT OF THE NAVY

Captain SCHIFF. Thank you. I would like to thank Chairman Ortiz and the Subcommittee for giving me the opportunity to testify. The Secretary of Navy has asked that I participate in the hearing on his behalf. The United States defense strategy for the 1990's is critically dependent on traditional freedoms of navigation and overflight of the world's oceans, including unimpeded transit of international air space and archipelagic waters.

Despite the end of the cold war, many of our allies and interests are located far away from the United States. Downsizing of our armed forces, coupled with reduced forward basing, means that we are going to have to have substantial air and sea lift capabilities to enable our forces to be where they are needed when they are needed. An essential element of this requirement is the assurance that key air and sea lanes of communication will remain open as a matter of international legal right. It is not an acceptable option that they be open at the sufferance of coastal and island States along the route and in the area of operations, or because we have the military strength to keep them open.

Current U.S. oceans policy has adequately protected U.S. security interests. We have relied on customary international law as articulated in the traditional uses provisions of the 1982 Law of the Sea Convention. Diplomatic protests and assertion of rights in the freedom of navigation program have reinforced these rights.

However, excessive maritime claims by coastal States can continue to threaten U.S. security interests. The risks, costs and efforts to counter these challenges will increase as U.S. military force

structure, including CONUS overseas bases, is reduced over the next 5 years.

Therefore, long-term stability of the oceans, which U.S. security interests require, can best be met by a comprehensive and widely accepted Law of the Sea Convention. Provisions of the 1982 Law of the Sea Convention which deal with traditional uses of the sea constitute a fair balance of the interests of all nations in their use of the oceans and are fully consistent with traditional freedoms of navigation and overflight.

Until recent efforts to reform Part XI of the convention, the United States had not been able to endorse the convention as a whole, despite the adequacy of the provisions dealing with traditional uses of sea.

However, the recent attempts at reform hold out hope that past concerns over Part XI can be met. The risk exists in rejecting the gains achieved in Part XI negotiations and ultimately rejecting the treaty as a whole that other nations will increasingly act counter to the treaty's provisions to our detriment. If the convention is not widely accepted and the tightly wound ball of rights and obligations continue to unravel, we will be hard pressed to argue that the convention continues to reflect customary law.

We may encourage bolder challenges to practices that we take for granted today. Additionally, some countries reject our view that the convention reflects customary international law arguing that the convention is contractual in nature, that it is a package deal and that only parties can benefit from its provisions.

Furthermore, failure to ratify the convention after successful Part XI negotiations could undermine our leadership role in other international conventions and initiatives.

The 1990's have demonstrated the need for a brand of leadership based on building respect for the world community, for the rule of law and support for cooperative efforts among nations to resolve their most difficult problems. As the preeminent global power of the 1990's and beyond, the United States is uniquely fitted to assume the mantle of leadership in the development of law applicable to the world's oceans. That leadership can best be exercised through a broadly accepted Law of the Sea Convention.

That is why the Navy hopes that the United States will be able to reach a satisfactory resolution on Part XI, allowing us to sign and ratify the convention.

From our perspective, where global mobility and operational flexibility are critical requirements, the 1982 Law of the Sea Convention provides the best hope for achieving long-term stability in the use of the world's oceans.

Thanks for your attention, I will be glad to try to respond to any questions that you have.

[The statement of Captain Schiff can be found at the end of the hearing.]

Mr. ORTIZ. Thank you, Captain. I have a few questions for Ambassador Colson and Dr. Evans. How would the United States ratification of the Law of the Sea Treaty affect the reciprocating State agreements negotiated under the Deep Seabed Hard Mineral Resources Act? If it is not authorized, how would overlapping claims such as the recent Korean claim, be solved?

Ambassador COLSON. Could I ask Mr. Scholz to address that question?

Mr. ORTIZ. State your name for the record.

Mr. SCHOLZ. It is Wes Scholz and I am with the Economics Bureau of the Department of State.

Mr. ORTIZ. Thank you, sir.

Mr. SCHOLZ. The reciprocating State arrangements that were negotiated during the early to mid-part of the 1980's were designed at that time to be generally consistent with the obligations under the Law of the Sea Convention. So that if one assumes that all of the parties to those agreements were eventually to become parties to the Law of the Sea Convention, I don't see any real inconsistency there. The only issue that arises is if some parties to those agreements didn't become party to the Law of the Sea Convention, and then there is the possibility of the technical legal issue about the inconsistency of obligations but there is also a political question associated with whether or not members—parties to the Law of the Sea Convention would wish to continue that relationship with nonparties to the Law of the Sea Convention.

With regard to possible conflicting claims, NOAA has determined that the claimed area up by South Korea does not, in fact, conflict with any of the existing mine site claims, and, therefore, we don't see a particular problem in that instance, thank you.

Mr. ORTIZ. Dr. Evans, would you like to add to that?

Mr. EVANS. No, I really don't have anything to add. I am glad that Mr. Scholz did point out that there is no conflict in the South Korean claim. There was apparently a technical plotting error in laying out where those claim sites are located but that was resolved and there presently is no conflict in the claim sites.

Mr. ORTIZ. Ambassador Colson, how important and necessary is support from the United States ocean mining industry to the United States' ratification of the Law of the Sea Treaty? Would the United States sign the treaty without the endorsement of the ocean mining industry?

Ambassador COLSON. That is a question that ultimately the President is going to have to answer. It will be unfortunate if the ocean mining industry is not prepared to look carefully at the text of this emerging agreement, and consider carefully whether it might be satisfactory to their interests.

I can't answer the question as you posed it, because I think it does put us into the future somewhere.

I certainly hope that the ocean mining industry will take a hard look at how far the recent negotiations have come. I know that there have been strong opponents, as there have been many strong opponents of the regime of Part XI. The question that we have today, though, is not our opposition to Part XI. It is whether or not the agreement that is emerging is something that we can all work with and work under.

Certainly we would all rather have our hands totally free and not participate in an international community where we had to make some compromises and concessions from time to time. But I think what we have seen here is an agreement that really does reflect our interests and put us in a position to compete with other countries that will be interested in mining the seabed. And we will be

able to compete fairly under the international structure that is being developed.

Mr. ORTIZ. Thank you, Ambassador.

I have just one more question and then I will yield to my good friend, Mr. Fields. Would it be possible to secure the navigation rights provided by the treaty through other means such as bilateral agreements with various other nations?

Captain SCHIFF. Mr. Chairman, we have enjoyed what amounts to the navigational provisions of the treaty under President Reagan's ocean policy statement characterizing them as a codification of customary international law, and we have been fairly fortunate with that so far.

Bilateral negotiation for navigation rights is a mistake. That will not work for a couple of reasons. First of all, it would be our position that we have the rights anyway so there is no reason to be negotiating for them. And, we would be scurrying about the world trying to strike agreements with whomever happened to sit astride a waterway that we wanted to navigate through or overfly.

Mr. ORTIZ. I yield to the Ranking Member, Mr. Fields.

Mr. FIELDS. When I was first elected in 1980, a letter came across my desk asking me if I wanted to be a congressional advisor to the Law of the Sea Treaty and I thought this would be a great way to be involved in an international issue and learn about the way things work. And as I got into the treaty—and I don't mean to sound sarcastic—I just couldn't believe what was negotiated. And I paid my way and went to Geneva and talked to some of the delegates and Elliot Richardson told me that I didn't understand the way the world works. And basically, I should go back and forget about the treaty and let other people who were much senior to me decide issues like this.

Instead I came back and got involved. And we were able to stop a very bad treaty. And let me say to you, Ambassador, that I do recognize there have been improvements in what was originally negotiated. But let me also hasten to say, I see some real fundamental flaws here. And when I look at the preamble and I see words like "common heritage of mankind", the first question I have is, what does that mean, Ambassador?

Ambassador COLSON. "Common heritage of mankind" is something that, in concept, the United States has always supported. The Nixon Administration supported it. That is where we got the concept back out of early Republican administrations and it was to be given content in the law of the sea negotiations. And so, when we get a Law of the Sea Treaty that is widely ratified that the United States supports, that will give meaning to the common heritage of mankind. It is given detailed meaning in the text of the agreement that is emerging and that is what the common heritage of mankind will mean.

Mr. FIELDS. Many of us could sit around and in an intellectual sense talk about the common heritage of mankind but in practicality and application, I am concerned like many other people that when you write the content that you talk about, you end up setting a precedent for many things that could come in the future; things that perhaps we can't anticipate today such as a law of the moon, law of space, Antarctica. My question is why would we want to put

ourselves in that particular position, again denying ourselves in the future of some strategic interest or advantage that our country might have? Why should we do that?

Ambassador COLSON. Congressman, we always think about precedents when we negotiate our international agreements. They are always on our mind. We always have to, at the same time, look again at the agreement that we are negotiating.

If we are worried about outer space, would we look at the Law of the Sea Convention as a precedent that might be harmful? We have created a voting mechanism in the new Law of the Sea agreement that basically lets the United States drive the show through the voting structure that has been developed. Maybe that is not so bad—not so bad a precedent. Maybe it is good. Maybe it is a precedent that we want to see. I think these precedents work a lot of different ways.

We have a different set of arrangements in the Antarctic. They are Antarctic-specific. We didn't negotiate the Law of the Sea Treaty the way we did because the Antarctic Treaty was a particular way. We negotiated a Law of the Sea convention that at least for most of the text made sense for U.S. ocean issues. We didn't turn to the Antarctic Treaty as a precedent.

Mr. FIELDS. I think I know the answer to this question. When you talk about "common heritage of mankind" as a concept and people like yourself giving content to the concept that when we do negotiate a law of the moon or a law of the space or something in the future, then common heritage of mankind is going to be intrinsic in whatever document we are negotiating at that point.

Ambassador COLSON. I don't know that it would be intrinsic at all. It would be for the United States to establish whatever negotiating parameters for outer space, or Antarctica, or whatever area, that we are negotiating about. We would negotiate our interests in that setting.

We have here a long history that starts in the 1950's of the United States leading the world into the First U.N. Conference on the Law of the Sea. We went into a Second U.N. Conference on the Law of the Sea in 1960. During the 1960's there were U.N. resolutions that the United States strongly supported, talking about the common heritage of mankind and we established a third conference to, among other things, give that phrase, whatever it might have meant, that was set forth in a United Nations resolution, some content.

Mr. FIELDS. I think you hit an operative word and that is a lot of constituents are going to feel that if this is ratified that we have given something that we didn't need to give. Let me ask you specifically in Article 160 it talks about the interests and needs of developing States and people who have not attained full independence or other self-governing status.

Now, tell me what that means. Are we talking about groups of national liberation?

Mr. SCHOLZ. Congressman Field, that was intended to cover the situation where you have as a result of States that are approaching independence that may have had some kind of associated relationship with a metropolitan power before——

Mr. FIELDS. Does this mean that there would be funding for groups like the Irish Republican Army?

Mr. SCHOLZ. As a practical matter, no, I don't think it would mean there would be funding for such groups because the United States——

Mr. FIELDS. Is it sensible for the Irish Republican Army to have revenue-sharing status in this treaty?

Mr. SCHOLZ. The only way would be if the United States were not opposed to that.

Mr. FIELDS. What about the PLO?

Mr. SCHOLZ. The same thing is true. If they were designated under the U.N. resolution as a potential recipient.

Mr. FIELDS. So you are telling me the answer is yes?

Mr. SCHOLZ. No; the answer is yes only if the United States were not opposed to that.

Mr. FIELDS. You lose me on that and you are going to lose a lot of other Americans.

Let me move to another major problem that we had back in the early negotiation of this treaty and that is mandatory technology transfer.

And, again, I am going to say that I appreciate the attempt to move this issue in the right direction. However, if I understand the treaty, there is a free mine site that is offered to the Enterprise. The Enterprise enters into a joint venture, in essence, with a mining company, which to me a joint venture means you are going to be sharing technology. There are also training provisions in the treaty for Enterprise personnel.

Tell me how that distinguishes from a technology transfer.

Mr. SCHOLZ. First of all, specifically on the technology transfer provisions, there is no longer any mandatory technology transfer provision in the treaty. There is an obligation to facilitate access to technology generally consistent with the protection for intellectual property rights.

Mr. FIELDS. That is a joint venture.

Mr. SCHOLZ. An individual commercial mining enterprise does not have to joint venture.

Mr. FIELDS. With the Enterprise?

Mr. SCHOLZ. That is a voluntary decision on their part whether or not they wish to join the enterprise. Prior to the enterprise even having the opportunity to entertain the possibility of a joint venture operation, there would have to be a decision made in the Council of the authority that it was appropriate for the enterprise to begin to function. And that is a decision that the United States and two other industrialized countries acting in concert could block if they believed that a joint venture operation with the enterprise couldn't take place on the basis of sound commercial principles.

Mr. FIELDS. Mr. Scholz, since you are the person most familiar at the table with the Treaty, why was the concept of chamber voting chosen over the model that currently exists in the United Nations where the United States does continue to exercise some prerogative?

Mr. SCHOLZ. Well, the reason we focused on chambered voting was that the examples we turned to were not U.N. political organizations but to international economic institutions where in the ex-

ecutive organs of the institutions voting, power is based on the economic interests at stake. And in the case of the international seabed authority, the three primary interests that were going to be affected by the decisions of that organization were the interests of consuming countries like the United States, investors in seabed mining where the United States also has an interest, and then land-based producing States that produce minerals on land that might be competed with as a result of deep seabed mining.

And it was those groups that was believed were underrepresented on the Council and therefore we looked to chambered voting as the most viable solution to magnify our influence and our ability to protect our interests there.

Mr. FIELDS. Thank you. Captain Schiff, has our country been denied access to any international straits since we refused to sign the Law of the Sea Treaty in 1982?

Captain SCHIFF. No, sir.

Mr. FIELDS. OK.

Mr. ORTIZ. Mr. Hughes, the gentleman from New Jersey.

Mr. HUGHES. Thank you, Mr. Chairman. And I congratulate you in convening I think a very timely hearing. And I welcome the panel. I gather that you believe you have made a lot of progress, Mr. Ambassador——

Ambassador COLSON. Yes, sir.

Mr. HUGHES [continuing]. Just in the past year in particular, in addressing many of the concerns that forced us to basically not become a signatory dealing with the 11th part of the treaty. And as I read some of the testimony that is to come, particularly from Brian Hoyle, the attorney from the deep seabed mining industry, they still have some basic concerns about investment disincentives, particularly relative to the due process questions both for natural and for corporate citizens.

What is being done to address those particular concerns?

Ambassador COLSON. Again, I would like to ask Mr. Scholz if he would address this.

Mr. SCHOLZ. Yes, Congressman Hughes, as I understand the issue, the U.S.-licensed consortia are concerned that decisions taken by the international seabed authority in relation to any authorizations they might be granted, might in some sense be arbitrary or contrary to the provisions of the convention or a contract of work that they have acquired and that the provisions in the convention for redress are inadequate. The convention provides that not only does the State which would sponsor a particular applicant and a particular commercial enterprise have the standing to challenge an action taken by the authority before the Law of the Sea tribunal, but that the applicant itself has standing independently to take the issues before that tribunal.

Mr. HUGHES. Let me just stop you right there. Mr. Hoyle makes the statement on page 6, the convention would prohibit even the United States Government from challenging a discretionary act of the seabed authority. Is that accurate?

Mr. SCHOLZ. The provisions of the convention on dispute settlement do carve out an exception in the case where it is determined that the authority is not acting contrary to a provision of the convention, but it is acting within a range of discretion that the au-

thority has been granted by the convention's provisions. And, thereby it limits one's ability to question whether or not that discretion, which clearly exists under the convention, has been exercised in an adequate fashion.

Mr. HUGHES. Doesn't that go to the heart really of the question of whether you can attract venture capital if in fact there is some uncertainty as to basically what—you know, anything the seabed authority can do, what our government can do, to protect United States citizens against arbitrary acts?

Mr. SCHOLZ. That exception reflects the distinction that exists between differing legal systems in the international community, and there are many legal systems in the international community where the scope of judiciary review of administrative action is not as broad as it is in the United States. But nevertheless, investment still takes place in those countries.

It is my understanding that European tradition, for example, civil law, in Europe, quite often the zone of review is narrower on the questions of the exercise of discretion than it is in the United States; nevertheless a good deal of industrial activity takes place in Europe despite that. We are talking about a very small exception here that reflects the differences that exist in existing legal systems worldwide.

Mr. HUGHES. Mr. Hoyle also says unless the United States Government intends to engage directly in ocean mining as an investor and operator, the United States would lack assured access to seabed minerals under the agreement. Is that accurate?

Mr. SCHOLZ. No, I don't think that statement is accurate. I think that whether or not the United States has access to deep seabed minerals depends not only on an overall assessment of all the provisions of the convention and the modifications we have made to those, but individual investment decisions by individual companies that will be made under circumstances that we cannot anticipate. I think what we have done in this agreement is we have removed the major impediments to private investment that existed before, that we all recognized, and we have created a regime that while it will not necessarily foster deep seabed mining activity—that depends on circumstances yet to come—it has the potential of doing so. And it has the potential of allowing investment to take place.

Mr. HUGHES. Well, let me just say, I understand that we may not have commercially exploitable deep seabed minerals at this point for other reasons, because of the economics, but I don't know how we could expect institutional investors to invest if there is not some degree of certainty, some protections that their investments will receive due process and that they can be protected against unfair arbitrary decisions 5 years from now. Isn't that a legitimate concern on the part of private sector?

Mr. SCHOLZ. It is certainly a legitimate concern. I think the difference comes in our belief that the institution as they have been reconfigured and the opportunities that exist under the convention to review decisions by those institutions are, in fact, adequate to that end. I mean it is a difference of view. It is a different assessment based on the same fact.

Mr. HUGHES. Do you envision a transition period? It is going to take a number of years basically to modify that section, 3, 4, 5 years perhaps.

Do you envision a transition? I mean, we now have an act that basically governs experimental investment at the present time. And if I were an investor looking at, you know, any changes in the treaty, I would want to make sure that during any hiatus I would be protected.

Do you envision some transition period?

Mr. SCHOLZ. Inevitably, there will be a transition, assuming that the United States—that this Administration decides to sign the amended agreement and to submit the agreement and the convention to the Senate for advice and consent. There will be a period of time before that process is completed one way or the other. And it would be our assumption that the Deep Seabed Hard Mineral Resources Act would continue to govern the action of U.S. licensees.

Mr. HUGHES. It would be in effect until the modifications are ratified?

Mr. SCHOLZ. Until the treaty comes into force and the appropriate implemented legislation is enacted. And indeed, the agreement itself provides that during this transitional period, while States may provisionally apply its provisions, they will do so in accordance with their national law so that there is an express reservation in the text of the agreement that acknowledges that individual State's legal situations will require time to be conformed to their obligations under the convention and allow that situation to continue.

Mr. HUGHES. All right. Thank you, Mr. Chairman.

Mr. ORTIZ. I would like to thank each of the Federal agencies for coming here today to share their insights on the Law of the Sea Treaty and the Deep Seabed Hard Mineral Resources Act today. Some of the Subcommittee members and I have additional questions for the witnesses and we will appreciate your written reply for the record. Thank you for coming.

[The information follows at the end of the hearing.]

Mr. ORTIZ. We will pause for a few minutes so that the other witnesses can approach the witness table and while the staff can rearrange the names. Thank you very much for being with us.

Since we got all the witnesses accommodated now, we will begin the second panel. We have with us Dr. Myron H. Nordquist, Faculty of Law, United States Air Force Academy; Dr. Fred C. Dobbs, Assistant Professor in the Department of Oceanography, Old Dominion University; Mr. Brian Hoyle, an attorney representing the deep seabed mining industry; and Ms. Sally Ann Lentz, Co-Executive Director, General Counsel for Ocean Advocates.

Thank you for appearing before this Subcommittee today. We can begin with Dr. Nordquist when you are ready, sir.

STATEMENT OF DR. MYRON H. NORDQUIST, FACULTY OF LAW, UNITED STATES AIR FORCE ACADEMY

Mr. NORDQUIST. Thank you very much Mr. Chairman.

I might note that I spent 7 years in the Office of Legal Adviser in the Department of State during the time the negotiations were

underway and attended a number of those sessions. And also prior to teaching cadets at the Air Force Academy, I was the Acting General Counsel for the Department of Air Force.

In my judgment, the main issue for the Subcommittee is whether the overall national interests of the United States are better achieved by joining or rejecting the Convention. My opinion is that the paramount interests of the United States are decisively better served by acceding to the Law of the Sea Convention. I do not believe that our national security interests are adequately protected by reliance on the vagaries of customary international law or State practice.

This judgment takes fully into account the theological and doctrinal drawbacks that exist in the Convention pertaining to deep seabed mining. In my view, in other words, the deep seabed mining portion of the Convention is the tail wagging the dog. No one seriously plans to mine the deep seabed in the foreseeable future.

If that time comes in several decades or more, I predict that mining within the largely unexplored 200-mile zones that cover deep seabed deposits will be more attractive than mining under a U.N. area. And I might add, Mr. Chairman, that when I was in private practice, I advised a very prominent company in Texas with representatives on its consortium from Germany and Japan. It was our definite strategy that if it had been economic (and we conclusively decided it was not), we would have gone after a mine site in one of the 4 million square nautical miles of deep seabed area that exists now in the South Pacific which are under national jurisdiction. Cutting a deal with a single, individual country was a lot more attractive to us and we thought we could get a comparable quality mine site in national jurisdiction.

So to put it back into perspective, my view is that one or two U.S. mining operations that may or may not ever reach commercial reality under a U.N. regime simply cannot justify a decision to reject a convention with clearly expressed rights essential to our national security interests. The real world benefits of the Law of the Sea Convention outweigh dramatically the theoretical detriment in the deep seabed regime.

What then are those benefits?

First, and foremost, is freedom of transit for our military airplanes and ships over, under, and on the surface of international straits.

Second is a clear right of innocent passage for our warships through all territorial seas with no arguments about a requirement for notification or prior approval.

Third, given that archipelagic States now overlap vast areas of former high seas such as the Java Sea, is the right of archipelagic sea lanes passage. What that means is that our submarines may go through these areas submerged. It means that our carrier task forces can go forward deployed. It means that our bombers and escort aircraft can go forward in combat formation.

These are important, hard core national security interests that are only safeguarded by the express written language of the Convention. And in my opinion, those rights alone more than outweigh the theoretical detriments that the sideshow on deep seabed mining brings to mind.

Fourth, and this is a matter that is going to be increasingly important, the Convention provides a comprehensive legal framework to guide in the recovery of the world's terribly, criminally, overexploited fishery stocks. Attached to my written testimony is the first of what I think will be several such agreements.

This one deals with straddling stocks such as those in the North Pacific, and highly migratory species, tuna, if you will. By the very express terms of that agreement, the foundation is the Law of the Sea Convention. Here again is a very real here-and-now important interest for the United States and many other countries that is built upon the express rights and duties that are provided in the Law of the Sea Convention.

Last, the Law of the Sea Convention is the only hard law for the marine environment. Despite all the hoopla about the Rio Conference and the Stockholm Conference, the only real law that we have are the 45 articles and the 101 paragraphs that deal with the protection and preservation of the marine environment that are in the Law of the Sea agreement. I believe that this is the best core around which we can cluster satellite agreements to protect and preserve the environment.

Mr. Chairman, the Deep Seabed Hard Mineral Resources Act was always intended as an interim regime for our domestic miners until an international regime became effective. In my view, the level of funding is a separate issue upon which I offer no opinion, but I see no reason yet for the legislation to lapse.

The efforts to negotiate improvements in the seabed mining portions of the Law of the Sea Convention make a sterile document even more impotent. I find that the Boat Paper agreement is properly viewed in that perspective, and thus acceptable. Therefore, my conclusion is that the best decision for the overall national interests of the United States is to accede to the Convention and to the Boat Paper.

Thank you.

[The statement of Mr. Nordquist can be found at the end of the hearing.]

Mr. ORTIZ. Thank you, Doctor. Let me assure the members of the witness panel that your testimony in its entirety and any other material that you might have will be included for the record.

Dr. Dobbs.

STATEMENT OF DR. FRED C. DOBBS, ASSISTANT PROFESSOR, DEPARTMENT OF OCEANOGRAPHY, OLD DOMINION UNIVERSITY

Mr. DOBBS. Thank you, Mr. Chairman. I would like to make clear that I am here representing Dr. Craig Smith of the University of Hawaii, with whom I have performed deep sea research. I appreciate the opportunity to represent him and deliver this verbal summary of his testimony.

The first topic concerns our current understanding of deep sea ecology and potential mining impacts. Our knowledge of the deep seabed is limited but we know that its ecology is remarkable. Deep seabed communities are generally characterized by small sediment dwelling animals that attain very high biodiversity. Deep sea ecosystems account for a substantial number of the total species on

our earth. This diversity of life is concentrated in the top centimeter of seafloor sediments where the animals exploit extremely limited food that sinks from the sunlit waters overhead. While deep sea communities are rich in species, they are very poor in biomass.

In addition to harboring high biodiversity, it is clear that most deep sea ecosystems are fragile. Physical disturbances are rare. These ecosystems are thus heavily disturbed by even modest modifications. Limited experimental studies suggest that small disturbances may take many years to recover. In fact, no deep ocean researcher has documented complete community recovery from any experimental disturbance. Seabed community recovery from severe large scale disturbances, covering tens to hundreds of square kilometers such as might occur from mining, seems likely to require decades.

Current ecological thinking suggests that mining of manganese nodules will impact seabed communities in several ways. The most significant impact will result from the resuspension and subsequent redeposition of sediments. The impacts of sediment redeposition are difficult to predict, but will likely affect biological communities kilometers from the nearest mining vehicle.

To predict the environmental effects of nodule mining, we require ecological information of at least three types. First, we need to know the dose response functions of seabed organisms to sediment redeposition. That is, what are the effects of increasingly greater amounts of redeposition.

Second, we need to know the recovery times of seabed communities following mining disturbance. Such information is essential to predict how long a mining tract should be left fallow so that surrounding impacted areas return to undisturbed conditions.

Third, we need to know the geographic ranges of representative species likely to be negatively affected by mining. Without this information, we cannot predict how large an area can be disturbed by mining before substantial species extinctions begin to occur.

Our knowledge of these factors is terribly, terribly limited. We cannot constrain damaging redeposition doses or community recovery times to within a factor of 10. We cannot say whether 1 millimeter or 10 millimeters of redeposition is the threshold dose for major community mortality or whether disturbances such as mining will require 15 or 150 years for community recovery.

In addition, the geographic ranges of even a representative subset of deep sea species remain unevaluated. Thus, without dramatically more information on species ranges and tolerance to mining disturbance and the time scales of recovery from mining disturbance, species extinctions on a grand scale cannot be ruled out.

The second general topic is information generated by current environmental impact studies. Ongoing studies include the Benthic Impact Experiment conducted by the Ocean Minerals and Energy Division of NOAA, and the DISCOL experiment conducted by scientists from Germany. Both involve small-scale, short-term simulations of deep sea mining.

These experiments should provide insights into general disturbance effects and recovery patterns of deep sea communities following simulated mining. However, these experiments will provide

only limited predictive information concerning the effects of seabed mining.

Neither experiment appears able to accurately quantify the thickness of sediment redeposition associated with the small scale simulations. Lack of quantitative dose response functions will make it extremely difficult to extrapolate the results of these small-scale, short-term experiments to deep sea mining, a disturbance which is both major and long-term.

The difficulties with these experiments highlight the need for precise determination of resedimentation doses and monitoring of a broad array of ecosystem components in any future studies.

The third general topic to be addressed is additional knowledge needed to manage seabed mining impacts. We already have indicated that we need more information about dose response functions, time scales of seabed community recovery, and the geographical ranges of deep sea species.

In addition, a fourth area needs to be studied. The patterns of natural temporal variability in seabed communities from the prospective mining areas.

Deep sea communities traditionally are perceived as essentially unchanging. However, there is increasing evidence that changes in the upper ocean can alter the input of food on seasonal and interannual time scales. To distinguish mining effects from patterns that occur naturally, it will be necessary to determine temporal variability at unperturbed sites. Acquiring this knowledge should occur in a time scale that is dictated in part by the apparent recovery times of deep sea communities. Were mining to become economically feasible in 10 to 20 years, the appropriate environmental impact studies must be initiated now.

The final general topic I will discuss are recommendations concerning DSHMRA reauthorization. From a scientific research perspective, it would be highly desirable to reauthorize the DSHMRA with funding included to address the research topics outlined in this summary. Because much of the scientific information required is applied, this information would be most expediently acquired by a focused scientific program addressing well-defined goals. Such a research program will require stability in research directions and funding levels over a period of at least 10 years if significant progress is to be made.

Past experience suggests the need for a scientific steering committee to oversee mining impact research. Such a committee should have substantial control over the program's research directions and funding. Use of models for this type of program are common within the National Science Foundation. To avoid conflicts of interest, the steering committee should be composed of academic scientists not funded by NOAA to conduct nodule mining research.

In the past, scientific advice concerning mining impact studies has frequently been solicited by OMED via workshops, but much of the advice has not been followed. We believe that this policy accounts in part for the limited advances made in the past decade in our understanding of the environmental impacts of deep sea mining.

Thank you, Mr. Chairman. I refer you to the conclusions and I would be very happy to address any questions.

Mr. ORTIZ. Thank you, Doctor.
Mr. Hoyle.

STATEMENT OF BRIAN HOYLE, ATTORNEY, REPRESENTATIVE OF THE DEEP SEABED MINING INDUSTRY

Mr. HOYLE. Mr. Chairman, it gives me great pleasure to appear before you today to present the testimony of the three consortia licensed under the Deep Seabed Hard Mineral Resources Act of 1980. In the interest of brevity, I will summarize my testimony. I would ask that the full statement be included in the record along with the supplementary statement by Mr. Richard Greenwald on the importance of current environmental research being conducted by NOAA.

Mr. ORTIZ. No objection. It will be included in the record.

Mr. HOYLE. And another document: the March 15th analysis by the licensees of the draft agreement under negotiation in the United Nations.

[The information follows at the end of the hearing.]

Mr. ORTIZ. That would also be included in the record.

Mr. HOYLE. Thank you, Mr. Chairman.

I hate to say it, but I think Mr. Nordquist is entirely correct that if the Law of the Sea Convention as being negotiated in its present time is adopted by the United States, there will be no private investment in the seabed area beyond limits of national jurisdiction. I think his analysis is entirely correct on that point.

I serve as counsel to the three United States licensees: Ocean Management, Incorporated, Ocean Minerals Company, and Ocean Mining Associates. The three consortia have each put in over 25 years of work on ocean mining research and development and exploration and collectively have spent over a half-billion dollars. The report I have to give you today from our standpoint is stark, if not grim. There was a fourth United States licensee, but a year ago at this time the Kennecott group decided to abandon its license because of the uncertainty, because of the political and legal uncertainty created by the ongoing Law of the Sea negotiations in the United Nations.

The remaining three licensees may not be very far behind. It is no exaggeration to say that their decisions will be influenced greatly, if not resolved, by the results of this hearing. Congress' decision on reauthorization of the Deep Seabed Hard Mineral Resources Act will determine whether there is a United States ocean mining industry.

Failure by Congress to reauthorize the Act could only be seen by present and potential investors as a decision by the United States to abandon ocean mining. The problems facing the ocean mining industry today arise from uncertainty: uncertainty in the state of the metals market, uncertainty arising from the Law of the Sea negotiations, uncertainty resulting from the seeming disinterest or outright hostility of the lead agency toward the seabed mining program enacted by Congress, uncertainty about whether the needed environmental research will be done in time, uncertainty because the present authorization of the Deep Seabed Hard Mineral Resources Act expired this year.

Mr. Chairman, the ocean mining industry doesn't ask you to fix what is beyond the ability of Congress to fix. We don't ask Congress to influence the metal markets. We ask only that do you what is within your power to do: remove the political and legal uncertainty facing the miners in the United States by reauthorizing the Deep Seabed Hard Mineral Resources Act. We respectfully request that you reauthorize the Act for a period of 5 years and that you authorize funding at the same level of $1.5 million authorized in the previous reauthorization. That would enable the needed research to be carried out.

We also ask that the Congress send a clear and unmistakable signal to the United Nations and to the Administration's Law of the Sea negotiators that their current work product is not yet sufficient to satisfy the United States.

Mr. Chairman, there seems to be a fundamental misconception in the Administration and among many others who have testified today about the ocean mining industry. I think I feel a little like Alice must have felt after she passed through the looking glass. There is no ocean mining industry as such. There is a mining industry that can mine on land or at sea. The choice will be made by economics and by the risk evaluation of other risks, including legal and political uncertainties.

As I mentioned, the two legal and political uncertainties that really face us are NOAA's behavior over the last 2 years and the Law of the Sea. Over the past 2 years, NOAA has consistently tried to divert funds authorized by the Congress for the ocean mining program to other NOAA programs.

About six weeks ago, Under Secretary Baker stated before the Merchant Marine and Fisheries Committee that ocean mining does not fit into the strategic objectives of the agency. As investors, we find ourselves at the mercy of a lead agency that seems to want to disown us and it is not a very comfortable feeling.

At this point, Mr. Chairman, congressional oversight has been the only way in which NOAA has carried out its responsibilities under the Act. The clear notice from members of this body and the other body to NOAA have caused NOAA to perform its responsibilities under the Act, but only through loud and unequivocal messages from the Hill.

Mr. Chairman, the second problem facing us is the Law of the Sea Convention. The draft agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea makes significant progress in changing some of the most egregious provisions of that treaty. Unfortunately, from an investor's standpoint it does not do the job. The changes are laudable and important, but the bottom line is that the seabed mining regime that would be set out in the convention as affected by the draft agreement continues to be prohibitive to private investment.

Yesterday, I listened as the State Department's negotiator lectured the licensees on mining investment under the draft agreement. He accuses those who have already sunk half-a-billion dollars in ocean mining, and are prepared to invest about a billion-and-a-half each, of being unduly pessimistic about the seabed regime. At the same time, he went on to describe how the domestic

and foreign bureaucrats have evaluated the regime and found it to permit prudent investment in ocean mining.

Nevertheless, they admit that the system under the treaty would be an absolute proverbial Rube Goldberg machine requiring balls to fall in certain directions and water to flow and if at the end of the day you are very lucky, everything will go ahead and allow you to invest.

We fail to perceive how it is in the national interest of the United States or indeed that of other countries, to effectively lock up 60 percent of the earth's surface under a regime that prohibits ocean mining or the development of any other seabed mineral resource. The organization governing the system is frightening to investors. The international seabed authority would be based on a classic U.N. model. The current inability of the United Nations to perform its traditional peacekeeping role effectively does not give us great confidence that a new United Nations organization would be a prudent model for the management and regulation of ocean mineral resources.

At the same time, the convention will perpetuate what is essentially an international planned economy model for the development of ocean resources. The convention continues to provide for creation of an enterprise, a privileged State mining company of the international seabed authority.

I think in the United States a regulator that was also a miner would be seen to have an internal conflict of interest and it would certainly be anathema to our own political philosophy. Each applicant has to give half of its site to the seabed authority for development by the enterprise. An applicant must provide costly training service to the enterprise. And as far as technology transfer is concerned, despite the fact that we have heard today from the Administration that technology transfer obligations no longer exist, we have heard from quite reliable sources that the United States Patent Office cannot understand what the obligations would be under the convention as currently negotiated in the draft agreement.

Mr. Chairman, it would be a tragedy if the United States allowed the vast potential of the seabed to be locked up and denied to the American people, and indeed the people of the world by adherence to a convention that effectively prohibits investment. The resources we are talking about here are only the tip of the iceberg.

Let's not forget that a little over a century ago when Secretary Seward bought Alaska, it was known as Seward's Folly. In modern times, today, we find Alaska to be a veritable treasure trove of minerals. The vast resources of the United States are probably more than doubled by Alaska alone.

Mr. Chairman, we would ask this Committee to reauthorize the Act and, please, direct the Administration to settle for nothing less for the United States than a regime that permits investment to be made prudently beyond limits of national jurisdiction.

Thank you, sir. I would be happy to answer any questions that you might have.

[The statement of Mr. Hoyle can be found at the end of the hearing.]

Mr. ORTIZ. Thank you Mr. Hoyle. We will now go to Ms. Lentz.

STATEMENT OF SALLY ANN LENTZ, CO-EXECUTIVE DIRECTOR, GENERAL COUNSEL, OCEAN ADVOCATES

Ms. LENTZ. Thank you, I am Sally Ann Lentz, Co-Director and General Counsel of Ocean Advocates, a nonprofit organization devoted to the protection of marine and coastal resources. For over 10 years, the environmental community has encouraged U.S. ratification of the Law of the Sea Treaty, and adequate consideration of environmental concerns and development of a deep seabed mining regime.

My message to you today is the same. What is most striking, though, about the current situation from our perspective is that the major environmental concerns that were raised over a decade ago persist today.

Despite NOAA's research efforts, we are no closer to resolution of basic environmental questions associated with seabed mining. That is not to suggest that NOAA's efforts have been out-valued. To the contrary, much has been learned. Indeed, we realize how little we know about deep ocean marine ecosystems and we recognize the major obstacles that must be overcome to carry out meaningful research.

As Dr. Dobbs pointed out, we know that diversity is high in the deep ocean and that deep sea communities are scarcely identified and poorly understood. A comprehensive program of well-funded research on this ecosystem could provide much information that could be applicable to many important marine public policy issues.

The potential environmental consequences of mining itself are significant and pose special risks to maintenance of marine biological diversity, as the benthic plume created by the nodule collector destroys organisms in its path. Therefore, basic research on deep ocean ecology and benthic communities specifically, must go hand-and-hand with the analysis of the particular impacts of mining activities, which, in addition to completion of benthic impact analyses, should include a reassessment of surface plume impacts on the sea surface microlayer.

While basic research need not be conducted in the context of DSHMRA, it is critical to achieving a scientifically valid assessment of the impacts of mining. Absent other avenues, DSHMRA should be used as the vehicle to provide the mandate and funding to ensure that the necessary research is undertaken prior to issuing any permits for commercial mining.

Such a course of action is consistent with the precautionary approach to environmental protection. This approach adopts the view that in order to achieve the protection of the marine environment, it is necessary to apply preventive approaches to avoid degradation, as well as to reduce the risk of long-term or irreversible adverse effects.

Such preventive measures are mandated by this approach even before conclusive scientific evidence demonstrates that harm will occur. A key element of a precautionary approach is a commitment to clean production.

In the context of seabed mining, an assessment must be made of a proposed technology to determine whether clean production equipment and practices are being employed at every phase of the activity, from the point of collection to disposal of waste generated

in processing. Indeed, it has been suggested by others that the basic level environmental research should actually lead the engineering development of the technologies for mining.

Under the current circumstances, where there is no foreseeable compelling need for seabed mining, such a course is easily obtainable and reflects full application of the precautionary approach.

Turning now to the Law of the Sea Treaty, Ocean Advocates strongly supports United States ratification. The ocean knows no boundaries. International cooperation in managing and protecting the resources of the sea is necessary to ensure protection of national interests. In addition to codifying what already was perceived as customary international law, the Law of the Sea Treaty establishes norms for a wide range of marine public policy issues, including the establishment of rights with respect to navigation as well as important obligations to protect marine environment and conserve marine living species.

As regards environmental concerns generally, one of the most important features of the treaty is its dynamic evolving status. Articles 237 and 311 establish a symbiotic relationship between the convention and other issue-specific environmental agreements such as the London Dumping Convention, vessel source pollution treaties and regional seas agreements.

As long as those agreements are consistent with convention objective, the adoption of issue-specific international rules and standards under these other agreements are considered applicable as well to all Law of the Sea Treaty parties.

While United States reliance on customary international law has some advantages, a number of important U.S. interests cannot be adequately protected unless entry into force of the treaty is accompanied by wide participation by the global community. And this is discussed in more detail in our written statement.

Given our interest in U.S. ratification, Ocean Advocates fully supported efforts by the State Department to resolve outstanding issues concerning the deep seabed mining regime. Progress has been made to strengthen the environmental protection provisions of the treaty in the context of these negotiations and we strongly support efforts in that direction.

In addition, we support the development of a protocol in provisional application as a mechanism for securing U.S. ratification and instituting the necessary changes. In conclusion, Ocean Advocates strongly supports U.S. ratification of the Law of the Sea Treaty as a means to further develop and promote on a worldwide basis an environmentally sound marine public policy.

In addition, we support reauthorization of DSHMRA to the extent that its provisions continue to support environmental protection and facilitate the necessary research, including basic research in deep ocean ecology. The likelihood that a viable market for seabed mining is decades away provides ample opportunity to properly assess the environmental impacts and to shape the technology to eliminate and minimize risks.

Thank you.

[The statement of Ms. Lentz can be found at the end of the hearing.]

Mr. ORTIZ. Thank you very much. I have just a few questions and this is for the entire panel.

I noticed that Mr. Hoyle notes in his testimony that Part XI negotiations have been conducted with very little interagency or industry participation. In your opinion, did the Part XI negotiations process fairly include all interested parties?

Mr. HOYLE. Honestly, no. I think Mr. Nordquist and I go back 20-some-odd years in U.S. Government negotiations on Law of the Sea and remember a time in which all U.S.-affected interests in Law of the Sea did participate in the United States delegation and there was a formal mechanism for input on Law of the Sea policy. We found in the last year that our access has been extremely limited to the State Department.

We have received about three or four briefings in the last year-and-a-half, but efforts to have a more meaningful dialog have been curtailed because we were told if we met with the State Department and they met with us, they would have to meet at the same time with a whole lot of other interests that would cause the discussion to be diluted and it just wasn't feasible to do it. So, frankly, I don't think there has been any meaningful participation; not by the seabed mining industry.

Mr. ORTIZ. Any of the other panel that would like to give me any input? Do you all agree?

Mr. NORDQUIST. Well, I don't know that I have anything to offer, Mr. Chairman. I suppose there is a question: Is there anything that could be done that would satisfy the industry? And I bet you know the answer.

Mr. HOYLE. Mr. Chairman, that kind of innuendo has not been helpful to a meaningful dialog between industry and government and the creation of a policy that would result in a treaty that would enable investment to be made. That is the kind of innuendo that we have been consistently confronted with from this Administration and from those who are proponents of the Law of the Sea Convention. The industry's attitudes are always characterized without asking the industry what its position is.

You know, we were told a year-and-a-half ago by this Administration that we better get on the train, that the train was leaving the station, and we better get on it.

Now, Mr. Chairman, I always thought a person only got on a train if the train was going to a destination that one wanted to reach, but we were pretty well told before the train left the station that the train was not going to the destination that we wanted to reach. And what we wanted was not negotiable and no effort would be made to negotiate it. Why would one board a train going to a destination which one does not want to reach? I don't think this Administration has made a serious effort to try to deal with the investment issues facing Law of the Sea.

Mr. ORTIZ. Thank you. I have another question. What minimum conditions are necessary for industry to become a viable part of a deep seabed mining regime under the Law of the Sea treaty in your opinion?

Mr. HOYLE. Well, the basic objective of industry and, indeed, we think of the United States Government at least articulated by the United States over at least four administrations until this Adminis-

tration, has always been assured access under reasonable conditions to the security of tenure. In industry's viewpoint—we have not heard that viewpoint from this Administration, and I think part of the problem—we were handed this document yesterday, Mr. Chairman, dated 15 April 1984, called the draft resolution and draft agreement relating to the implementation of Part XI of the 1982 United Nations Convention on the Law of the Sea. We were told by the State Department yesterday that this is essentially the treaty that will be signed by the United States. There is one more meeting scheduled in New York at the end of May. The purpose of that meeting is to conform the language text.

As I recall in meeting to conform language text, there is really not an opportunity for renegotiation so there is not going to be any more negotiation on this treaty. Here is what you have—and this Administration has never articulated what its objectives are in renegotiation. They have chosen what I would have characterized when I was in the State Department as being the issues of most concern to the United States Government as a government. You deal with the review clause, which has always been a government issue; something of vital concern in the view of the Senate to its prerogatives under the Constitution of advice and consent; issues such as production control and technology transfer, which the United States Government has a very strong abhorrence of because they set adverse precedents in another negotiation.

But this Administration has never tried to deal with the fundamental problems of assured access and security of tenure. Those have been something which our efforts to tell the Administration what we thought needed to be done, we have basically been told, don't tell us that. That is really not negotiable.

You were told earlier by the State Department representative that they have done away with the high upfront fees. In this text, they have not done away with the high upfront fees. What happens is that the million-dollar-a-year upfront annual fee accumulates.

So if you take, say, 15 years to go from exploration until you are ready to engage in commercial recovery, the miner is going to be confronted by a bill from the seabed authority for $15 million on the day that he applies for a commercial recovery permit.

There is still a $250,000 license application fee for an exploration license, even though we have already paid NOAA $100,000. I would note that the United States Government has been able to do the same things for less than $100,000, that the authority wants $250,000 to do. But we are told that we have to pay it all over again.

Is there any wonder that a mining company would choose to mine on land as opposed to a seabed if these are the terms that are going to face a prospective investor? I just don't find and I don't think that my clients could find the basic conditions necessary in an investment regime that provides security of tenure.

We have been told this afternoon, Mr. Chairman, that the enterprise has effectively been done away with by the changes in this treaty. Now the enterprise hasn't been done away with. There is a condition precedent bringing the enterprise into force. That condition precedent is an affirmative vote of the Council.

You say the United States could block that. But, Mr. Chairman, one of the problems of the whole decisionmaking process here in the Council is that this is a regime predicated on blocking things from happening. And if the United States can block things, certainly other governments can block things that we as investors vitally need the Council to do.

So we might find ourselves in the very awkward position of begging that our major competitor be brought into existence in order to get the Council to move on to something else and deal with the permits that we need to move forward.

I am afraid things are not just as cut and dried as the Administration has presented them to you today.

Mr. NORDQUIST. Mr. Chairman, I don't think the problem has anything to do with the legalities up in the United Nations and all this stuff. I think it has to do with the fact that it isn't economic to mine. When the day comes, if it ever comes and nobody in this room is willing to tell you when that will be, my opinion is that the mining companies will go to the national jurisdiction areas to cut their deal.

So I don't think in the long run it makes any difference whether this particular agreement has all the little fine tunes in it that are going to make it acceptable or not. At the end of the day, the U.N. regime, if it is going to be viable, is going to have to compete with national regimes.

Mr. HOYLE. And land-based mining.

Mr. NORDQUIST. And what it has to compete with now, which it can't, land-based mining. I agree.

Mr. ORTIZ. I have one more question for the entire panel. Do you believe that it is necessary for NOAA to conduct deep seabed mining research? Would this research be more efficiently carried out by funding academic research through a peer review proposal system?

Mr. DOBBS. I am an academic scientist who has been funded by the peer review process, so I have considerable bias in this regard, and my answer is absolutely yes. I think—and I speak for Dr. Smith as well—we think that this peer review system, although clumsy at times, is absolutely the best way to reach a scientific consensus and to proceed about identifying goals and working to achieve those goals.

Mr. ORTIZ. Thank you, Doctor. Anybody else?

Mr. HOYLE. Mr. Chairman, from an industry standpoint, the importance is that the work be done. I think we would concur with Ms. Lentz completely that there is a lot of research that needs can be carried out on environmental issues. It is important to industry that this research be done well, early, and timely and that it be satisfactory to all interests concerned if possible.

And I think the history of the Alaska pipeline and the way it was held up and a lot of other activities that have been held up because of shoddy environmental research indicates from the industry standpoint that the working be done to the best of capability, whether it be by government or private—by universities.

Mr. ORTIZ. Thank you.

Ms. LENTZ. I would like to add, Mr. Chairman, that in order for the research to be undertaken properly, I believe there would be

some amendments required under DSHMRA if that is the vehicle to be used to make that happen.

Mr. ORTIZ. Thank you. Let me say that we have had some very interesting testimony this afternoon. We have had some very good suggestions and recommendations, and I can assure you that once the staff prepares the testimony, we will disseminate this information to the other members of this Subcommittee.

That concludes the testimony for this hearing. I want to thank you for your valuable testimony today. And I know that it is going to be very, very useful for the Subcommittee members once they get this information.

There are a lot of members who couldn't be here today, and I will include some questions for you members of this panel to answer at your earliest convenience.

[The information follows at the end of the hearing.]

Mr. ORTIZ. Thank you very much. And the Subcommittee stands adjourned.

[Whereupon, at 3:47 p.m., the Subcommittee was adjourned, and the following was submitted for the record:]

TESTIMONY BEFORE THE
SUBCOMMITTEE ON OCEANOGRAPHY
HOUSE MERCHANT MARINE & FISHERIES COMMITTEE

AMBASSADOR DAVID A. COLSON
DEPUTY ASSISTANT SECRETARY OF STATE
FOR OCEANS

APRIL 26, 1994

MR. CHAIRMAN, MEMBERS OF THE SUBCOMMITTEE. THANK YOU FOR THE OPPORTUNITY TO TESTIFY TODAY ON THE LAW OF THE SEA CONVENTION ON BEHALF OF THE ADMINISTRATION. AS YOU KNOW, THERE HAVE BEEN EFFORTS RECENTLY TO ADDRESS THE OBJECTIONS OF THE UNITED STATES, AND MANY OTHER DEVELOPED COUNTRIES, TO THE CONVENTION'S PROVISIONS ON DEEP SEABED MINING WHICH ARE FOUND IN PART XI OF THE CONVENTION AND RELATED ANNEXES. I AM ACCOMPANIED BY MR. WES SCHOLZ OF THE DEPARTMENT OF STATE'S BUREAU OF ECONOMIC AND BUSINESS AFFAIRS, WHO HAS LED OUR EFFORTS IN THESE DISCUSSIONS. HE WILL ASSIST ME IN ANSWERING YOUR QUESTIONS REGARDING THAT EFFORT.

ON NOVEMBER 16 OF THIS YEAR, THE 1982 UNITED NATIONS CONVENTION ON THE LAW OF THE SEA WILL ENTER INTO FORCE. THIS EVENT PRESENTS THE UNITED STATES WITH BOTH AN OPPORTUNITY AND A CHALLENGE. THE OPPORTUNITY IS TO TRY TO ACHIEVE A LONGSTANDING, YET ELUSIVE, UNITED STATES OBJECTIVE OF A WIDELY RATIFIED, COMPREHENSIVE LAW OF THE SEA TREATY PROTECTING AND PROMOTING THE WIDE RANGE OF U.S. OCEAN INTERESTS. THE CHALLENGE IS TO TRY TO AVOID THE ESTABLISHMENT OF A REGIME FOR MANAGING THE DEVELOPMENT OF MINERAL RESOURCES BEYOND NATIONAL JURISDICTION THAT IS INIMICAL TO U.S. ECONOMIC AND COMMERCIAL INTERESTS.

I CAN REPORT TO YOU TODAY THAT WE ARE CLOSER THAN EVER BEFORE TO ACHIEVING THE OBJECTIVE OF A COMPREHENSIVE, WIDELY RATIFIED TREATY THAT WE CAN SUPPORT; AND, THAT WE STAND ON THE THRESHOLD OF NOT ONLY MEETING THE CHALLENGE AND AVOIDING THE ENTRY INTO FORCE OF AN UNSATISFACTORY DEEP SEABED MINING REGIME, BUT THAT THE DISCUSSIONS THAT MR. SCHOLZ AND OTHERS HAVE PARTICIPATED IN HAVE RESOLVED A THORNY SET OF ISSUES IN A SATISFACTORY WAY.

LET ME TAKE A MOMENT TO SET THE CONTEXT.

SINCE THE 1960'S, A CENTRAL TENET OF U.S. OCEANS POLICY HAS BEEN TO ACHIEVE A COMPREHENSIVE TREATY ON THE LAW OF THE SEA. THE FIRST U.N. CONFERENCE ON THE LAW OF THE SEA IN THE 1950'S RESULTED IN FOUR CONVENTIONS WHICH THE U.S. SUPPORTED. BUT THOSE RESULTS IN MANY WAYS BECAME OUT-DATED QUICKLY BY THE EMERGENCE OF NEW NATIONS IN THE POST COLONIAL ERA WHO HAD SOME IDEAS OF THEIR OWN, AND BY THE FAILURE OF THE SECOND U.N. CONFERENCE IN 1960 TO RESOLVE THE QUESTION OF THE BREADTH OF THE TERRITORIAL SEA. THE CONTINUING GROWTH OF HUMAN ACTIVITIES IN THE OCEANS, THE DESIRE BY MANY STATES TO CONTROL THOSE ACTIVITIES OFF THEIR COAST, AND THE ADVANCEMENT OF NEW TECHNOLOGIES -- BE THEY TO ENABLE HUMANKIND TO CATCH FISH MORE EFFECTIVELY, TO CONDUCT MARINE SCIENCE, OR TO MOVE QUIETLY THROUGH THE OCEANS ABOARD A NUCLEAR SUBMARINE -- PRESENTED A CHALLENGE TO U.S. INTERESTS.

OUR INTEREST IN PROTECTING AND MANAGING FISHERY RESOURCES, CONTROLLING CONTINENTAL SHELF OIL AND GAS DEVELOPMENT, AND PROTECTING THE MARINE ENVIRONMENT LED THE UNITED STATES AND OTHER NATIONS

TO EXTEND THEIR JURISDICTION TO INCREASINGLY LARGE AREAS OF OCEAN SPACE. WHILE SUCH EXTENSIONS OF JURISDICTION SERVED IMPORTANT NATIONAL INTERESTS IN PROTECTING AREAS OFF THE COAST, SUCH EXTENSIONS BY OTHER NATIONS WERE NOT ALWAYS LIMITED TO MATTERS OF RESOURCE USE. THEY OFTEN REPRESENTED A POTENTIAL THREAT TO OUR INTERESTS AS A MAJOR MARITIME NATION IN FREEDOM OF COMMERCIAL AND MILITARY NAVIGATION AND OVERFLIGHT -- ON, OVER AND UNDER THE SEAS. IT IS FOR THIS REASON THAT THE UNITED STATES DURING THE NIXON ADMINISTRATION BECAME A PRIME MOVER IN SUPPORTING THE CONVENING OF THE THIRD UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA. OUR OBJECTIVE WAS TO ESTABLISH AND PRESERVE A BALANCE BETWEEN OUR INTERESTS AS A MAJOR MARITIME POWER AND OUR INTERESTS IN PRESERVING, PROTECTING AND REAPING THE BENEFITS OF THE RESOURCES IN ADJACENT OFFSHORE AREAS AND IN PROTECTING THE MARINE ENVIRONMENT. WE WANTED TO ESTABLISH THAT BALANCE GLOBALLY. AND, IN THE LATE 1960'S, AS THESE THOUGHTS WERE BEING DEVELOPED, A NEW FACTOR EMERGED -- THE PROSPECT OF MINING HARD MINERALS FROM THE SEA FLOOR BEYOND NATIONAL JURISDICTION.

THE THIRD U.N. CONFERENCE ON THE LAW OF THE SEA BEGAN IN THE EARLY 1970S. THE 1982 LAW OF THE SEA CONVENTION WHICH RESULTED FROM THAT 10-YEAR NEGOTIATING EFFORT HAS BEEN RECOGNIZED BY EACH SUCCEEDING U.S. ADMINISTRATION AS THE CORNERSTONE OF UNITED STATES OCEANS POLICY. THE MERIT OF THE CONVENTION IS NOT THAT IT PROVIDES THE ANSWER TO ALL LAW OF THE SEA ISSUES THAT HAVE ARISEN SINCE THEN, OR THAT MAY ARISE IN THE FUTURE, BUT THAT IT PROVIDES A BASIC FRAMEWORK FOR NATIONS WITHIN WHICH TO WORK OUT SOLUTIONS TO THE INCREASINGLY COMPLEX PROBLEMS OF THE USE OF OCEAN SPACE --

SOLUTIONS WHICH RESPECT THE ESSENTIAL BALANCE BETWEEN OUR INTERESTS AS A COASTAL AND MARITIME NATION. NOTWITHSTANDING THE SUPPORT FOR VIRTUALLY ALL OF THE CONVENTION BY SUCCESSIVE REPUBLICAN AND DEMOCRATIC ADMINISTRATIONS, SUPPORT FOR THE CONVENTION AS A WHOLE WAS NOT POSSIBLE, HOWEVER, BECAUSE OF ITS REGIME FOR MANAGING THE FUTURE DEVELOPMENT OF DEEP SEABED MINERAL RESOURCES BEYOND NATIONAL JURISDICTION.

BEFORE TURNING TO THE SEABED MINING QUESTION, I WOULD LIKE TO REVIEW BRIEFLY WHAT WE BELIEVE ARE THE PRIMARY BENEFITS OF THE CONVENTION TO THE UNITED STATES IN OTHER SPECIFIC AREAS: IT STABILIZES THE BREADTH OF THE TERRITORIAL SEA AT 12 MILES AND ESTABLISHES IMPORTANT NAVIGATION REGIMES: OF INNOCENT PASSAGE IN THE TERRITORIAL SEA; OF TRANSIT PASSAGE IN STRAITS USED FOR INTERNATIONAL NAVIGATION; OF ARCHIPELAGIC SEA LANES PASSAGE IN ARCHIPELAGOES; AND, IT RESPECTS THE TRADITIONAL FREEDOMS OF NAVIGATION AND OVERFLIGHT IN THE EXCLUSIVE ECONOMIC ZONE AND THE HIGH SEAS BEYOND. THESE NAVIGATION REGIMES ARE ALL CONSISTENT WITH OUR COASTAL INTEREST IN THE WATERS OFF OUR COAST, BUT THEY ALSO PRESERVE THE RIGHT OF OUR MILITARY TO USE THE WORLD'S OCEANS TO MEET OUR NATIONAL SECURITY REQUIREMENTS AND FOR COMMERCIAL VESSELS TO CARRY SEA-GOING CARGOES. IT ESTABLISHES THE 200-MILE EXCLUSIVE ECONOMIC ZONE, AND IT MAKES PROVISION FOR A WIDER CONTINENTAL SHELF. THESE REGIMES ARE FULLY SUPPORTIVE OF U.S. INTERESTS IN DEVELOPING OUR FISHERIES AND OIL AND GAS RESOURCES. INDEED, THE CONVENTION'S PROVISIONS IN THESE AREAS ARE FULLY CONSISTENT WITH OUR CURRENT OIL AND GAS LEASING PRACTICES AND OUR INTERNATIONAL FISHERIES POLICIES AND AGREEMENTS, INCLUDING THE

AGREEMENT REACHED RECENTLY CONCERNING FISHING IN THE DONUT HOLE IN THE BERING SEA, THE U.N. RESOLUTION PROVIDING FOR A MORATORIUM ON DRIFTNET FISHING AND OUR REGIONAL TUNA AGREEMENTS, WHILE LEAVING TO OUR DOMESTIC MANAGEMENT BODIES THE RESPONSIBILITY TO MANAGE OUR COASTAL FISHERY RESOURCES. THE CONVENTION ALSO IS A FAR REACHING ENVIRONMENTAL ACCORD ADDRESSING VESSEL SOURCE POLLUTION, OCEAN DUMPING AND LAND-BASED SOURCES OF MARINE POLLUTION. AND THERE IS MORE, BUT SPACE IS TOO LIMITED HERE TO RECOUNT THE MANY OTHER ASPECTS WE HAVE ALWAYS SUPPORTED OF THIS CONVENTION.

NOTWITHSTANDING THESE BENEFITS, THE UNITED STATES DECIDED NOT TO SIGN THE CONVENTION IN 1982 BECAUSE OF FUNDAMENTAL PROBLEMS WITH THE REGIME IT WOULD ESTABLISH FOR MANAGING MINERAL RESOURCE DEVELOPMENT BEYOND NATIONAL JURISDICTION. IT HAS BEEN THE CONSISTENT VIEW AMONG SUCCESSIVE U.S. ADMINISTRATIONS THAT THE DEEP SEABED REGIME OF PART XI IS INADEQUATE AND IS IN NEED OF FUNDAMENTAL REFORM IF THE U.S. IS EVER TO CONSIDER RATIFICATION OF THE CONVENTION AS A WHOLE.

IN THIS REGARD I WANT TO RECALL AN IMPORTANT POINT. MOST OF THIS CONVENTION WAS NEGOTIATED DURING THE CARTER ADMINISTRATION AND THAT ADMINISTRATION'S NEGOTIATOR, AMBASSADOR ELIOT RICHARDSON, AT THE END OF HIS ASSIGNMENT, TESTIFIED TO THE INADEQUACIES OF THE DEEP SEABED TEXT THEN UNDER REVIEW; THE REAGAN ADMINISTRATION MADE CLEAR THE U.S. OBJECTIONS TO THAT TEXT. YET THIS TREATY PART -- PART XI -- WAS NOT FIXED IN THE SUBSEQUENT NEGOTIATIONS. ULTIMATELY THE NEGOTIATIONS WERE

BROUGHT TO A CLOSE IN 1982 WITH THIS FLAWED TEXT IN PLACE AND THE CONVENTION WAS ADOPTED OVER THE FORMAL OBJECTION OF THE UNITED STATES.

I RECOUNT THIS TO EMPHASIZE OUR CONSISTENT SUPPORT FOR THE NON-SEABEDS PARTS OF THE CONVENTION AND OUR OPPOSITION TO PART XI AS IT EMERGED FROM THE NEGOTIATIONS. THROUGHOUT, WE HAVE SUPPORTED STRONGLY THE NEGOTIATED COMPROMISES IN THE OTHER PARTS OF THE CONVENTION, BUT HAVE STOOD FIRM AGAINST PART XI -- WHICH APPEARS IN THE TEXT OF THE 1982 CONVENTION OVER OUR OBJECTION.

THE BASIC FLAWS OF THAT DEEP SEABED MINING REGIME ARE MANIFOLD. BUT STATED SIMPLY, IT FAILED TO PROVIDE THE UNITED STATES, AND OTHER STATES WITH MAJOR ECONOMIC INTERESTS, A VOICE COMMENSURATE WITH THOSE INTERESTS IN DECISION-MAKING RELATING TO THE MANAGEMENT OF DEEP SEABED RESOURCES, AND IT WAS BASED ON A HIGHLY INTERVENTIONIST CENTRAL ECONOMIC PLANNING MODEL THAT WAS OVERLY BUREAUCRATIC AND WOULD HAVE PREEMPTED PRIVATE INVESTMENT IN DEEP SEABED MINERAL RESOURCE DEVELOPMENT, THUS, PREVENTING THE DEVELOPMENT OF THOSE RESOURCES WHEN ECONOMIC CONDITIONS WARRANT.

IN 1982, THE REAGAN ADMINISTRATION, IN ITS OCEAN POLICY STATEMENT, REAFFIRMED SUPPORT FOR THE REST OF THE CONVENTION WHILE IDENTIFYING THE SPECIFIC U.S. OBJECTIONS CONCERNING DEEP SEABED MINING. THEY FELL INTO TO TWO BROAD CATEGORIES: INSTITUTIONAL ISSUES; AND ECONOMIC AND COMMERCIAL ISSUES. ON THE INSTITUTIONAL FRONT, WE OBJECTED TO THE FACT THAT THE U.S WAS NOT GUARANTEED A SEAT ON THE EXECUTIVE COUNCIL OF THE

INTERNATIONAL SEABED AUTHORITY (THE ORGANIZATION THAT WOULD ADMINISTER THE DEEP SEABED REGIME); AND WE OBJECTED THAT DEVELOPING COUNTRIES WOULD DOMINATE THE ORGANIZATION BASED ON THE RULES FOR DECISION MAKING AND THE RELATIONSHIP BETWEEN THE EXECUTIVE COUNCIL AND THE PLENARY ASSEMBLY. IN ADDITION, WE OBJECTED TO THE FACT THAT THE CONVENTION'S PROVISIONS ON SEABED MINING COULD IN THE FUTURE BE AMENDED AND BIND THE U.S. WITHOUT OUR CONSENT; AND WE OBJECTED TO THE POSSIBILITY THAT FUTURE REVENUES FROM DEEP SEABED MINING MIGHT BE DISTRIBUTED TO NATIONAL LIBERATION MOVEMENTS OVER OUR OBJECTIONS.

ON THE ECONOMIC AND COMMERCIAL FRONT WE OBJECTED TO THE REQUIREMENT THAT COMMERCIAL ENTERPRISES, AS A CONDITION TO THE AWARDING OF MINING RIGHTS, MUST UNDERTAKE TO TRANSFER THEIR MINING TECHNOLOGY TO A COMPETING OPERATING ARM OF THE REGIME KNOWN AS THE ENTERPRISE, OR POSSIBLY TO DEVELOPING COUNTRIES. WE ALSO OBJECTED TO THE ENTERPRISE BENEFITTING FROM DISCRIMINATORY AND COMPETITIVE ADVANTAGES OVER COMMERCIAL ENTERPRISES, SUCH AS THROUGH FUNDING OF ITS INITIAL OPERATIONS BY STATE PARTIES VIA LOANS AND LOAN GUARANTEES AND BY A 10-YEAR HOLIDAY FROM PAYING ROYALTIES. WE ALSO OBJECTED TO THE REGIME'S PRODUCTION CONTROL ARRANGEMENTS THAT LIMITED THE LEVEL OF PRODUCTION FROM THE SEABED SO AS TO PROTECT LAND-BASED PRODUCERS OF DEEP SEABED MINERALS. WE ALSO OBJECTED TO THE REGIME'S ONEROUS SYSTEM OF FINANCIAL PAYMENTS THAT WOULD HAVE TO BE MADE BY COMMERCIAL MINERS, IN PARTICULAR A U.S. $1 MILLION ANNUAL FEE PAYABLE BEGINNING WITH THE EXPLORATION STAGE.

THESE FEATURES MADE THE REGIME NON-VIABLE AND LED THE UNITED STATES, THE UNITED KINGDOM AND GERMANY NOT TO SIGN THE CONVENTION. OTHER MAJOR INDUSTRIALIZED COUNTRIES THAT SIGNED THE CONVENTION DID NOT MOVE TO RATIFY, FOR THESE SAME REASONS. INDEED, TODAY, NO MAJOR INDUSTRIALIZED COUNTRY HAS RATIFIED THE CONVENTION.

IN THE LATE 1980'S, A NUMBER OF DEVELOPMENTS CREATED CIRCUMSTANCES WHICH CAUSED THE SECRETARY GENERAL OF THE UNITED NATIONS TO UNDERTAKE CONSULTATIONS WITH A VIEW TO SEEING IF SOLUTIONS COULD BE FOUND TO THE OUTSTANDING OBJECTIONS TO THE CONVENTION NOW CLEARLY EXPRESSED BY MANY MAJOR COUNTRIES. THE CHANGING POLITICAL ENVIRONMENT FOLLOWING THE WANING OF THE COLD WAR, AND THE EXPLOSION OF INTEREST IN FREE MARKET REFORMS IN DEVELOPING COUNTRIES IN ASIA, LATIN AMERICA AND WITHIN EASTERN EUROPE AND THE STATES OF THE FORMER SOVIET UNION WERE IMPORTANT FACTORS LEADING TO A CHANGE IN ATTITUDE. ANOTHER IMPORTANT FACTOR WAS THE DECLINE IN COMMERCIAL INTEREST IN DEEP SEABED MINING REFLECTING A 10-YEAR PERIOD OF RELATIVELY LOW METALS PRICES. AGAINST THIS BACKDROP, DEVELOPING COUNTRY SPOKESMEN BEGAN TO SPEAK OUT ON THE NEED FOR AN ACCOMMODATION.

THE SECRETARY GENERAL'S CONSULTATIONS, WHICH BEGAN IN 1990, WERE DEVOTED TO RESOLVING THE OBJECTIONS THAT HAD CAUSED THE UNITED STATES AND OTHERS TO REJECT THE DEEP SEABED MINING REGIME. HOWEVER, THE DECLINING NEAR TERM PROSPECT FOR DEEP SEABED MINING ALSO HIGHLIGHTED THE NEED FOR A MORE FUNDAMENTAL REEVALUATION OF THE REGIME FROM THE STANDPOINTS OF (1) REDUCING

THE SIZE AND COSTS OF THE REGIME'S INSTITUTIONS, AND (2) INTRODUCING FLEXIBILITY INTO THE REGIME THAT WOULD ALLOW IT TO EVOLVE IN KEEPING WITH THE ACTUAL LEVEL OF INTEREST IN SEABED ACTIVITY AT THE APPROPRIATE TIME.

THESE CONSULTATIONS BEGAN DURING THE BUSH ADMINISTRATION, AND A FAIR AMOUNT OF PROGRESS WAS ACHIEVED IN THE CONSULTATIONS IN IDENTIFYING CONCEPTUAL APPROACHES TO SOLVING OUR PROBLEMS WITH THE SEABED MINING PROVISIONS. EARLY IN THE CLINTON ADMINISTRATION AN INTERAGENCY REVIEW CONCLUDED THAT OVERALL U.S. INTERESTS IN THE CONVENTION WOULD BE BEST SERVED BY TAKING A MORE ACTIVE ROLE TO EXPLOIT THIS OPPORTUNITY TO SEEK CHANGES AND TO MAKE THE REGIME ACCEPTABLE TO US.

PROGRESS HAS BEEN MADE SWIFTLY. THE MOST RECENT ROUND OF CONSULTATIONS EARLIER THIS MONTH NEARLY COMPLETED WORK ON AN AGREEMENT THAT WILL FUNDAMENTALLY CHANGE THE SEABED MINING REGIME OF THE CONVENTION. IT IS IMPORTANT TO RECOGNIZE AT THE OUTSET THAT WHILE MUCH OF THE INSTITUTIONAL STRUCTURE OF PART XI HAS BEEN KEPT, IT HAS BEEN REDUCED IN SIZE AND SUBSTANTIALLY REVISED. THE NEW REGIME WILL PROVIDE THE U.S. AND OTHER INDUSTRIALIZED COUNTRIES INFLUENCE IN IT COMMENSURATE WITH OUR INTERESTS; IT WILL ENSURE THAT MARKET ORIENTED APPROACHES ARE TAKEN TO THE ADMINISTRATION OF THE RESOURCES OF THE DEEP SEABED; IT WILL AT THE OUTSET RECOGNIZE THE SEABED MINE SITE CLAIMS ESTABLISHED ON THE BASIS OF THE EXPLORATION WORK ALREADY CONDUCTED BY U.S. AND OTHER COMPANIES; AND, IT WILL STUDY THE POTENTIAL ENVIRONMENTAL IMPACTS OF DEEP SEABED MINING.

RATHER THAN SEEKING TO ESTABLISH A DETAILED REGIME ANTICIPATING ALL PHASES OF MINING ACTIVITY, THE AGREEMENT ESTABLISHES GENERAL PRINCIPLES IN THOSE AREAS WHICH RELATE TO THE OBJECTIONS WE HAVE RAISED ON COMMERCIAL AND ECONOMIC GROUNDS. THESE PRINCIPLES WILL BE THE BASIS FOR RULES AND REGULATIONS ESTABLISHING A MANAGEMENT REGIME FOR COMMERCIAL MINING WHEN INTEREST IN COMMERCIAL MINING EMERGES.

TO SUMMARIZE BRIEFLY, IN RESPONSE TO OUR SPECIFIC OBJECTIONS, THE AGREEMENT WOULD:

- INCREASE THE INFLUENCE OF THE U.S. AND OTHER INDUSTRIALIZED COUNTRIES TO A LEVEL COMMENSURATE WITH OUR INTERESTS BY: 1) GUARANTEEING A U.S. SEAT IN THE COUNCIL; 2) ALLOWING OURSELVES AND A FEW OTHER INDUSTRIALIZED NATIONS ACTING IN CONCERT TO BLOCK DECISIONS IN THE COUNCIL; 3) REQUIRING THAT THE ASSEMBLY CAN NOT ACT INDEPENDENTLY OF COUNCIL RECOMMENDATIONS; AND 4) ESTABLISHING A FINANCE COMMITTEE CONTROLLED BY THE FIVE LARGEST CONTRIBUTORS TO THE ORGANIZATION'S BUDGET WHICH MAKES DECISIONS BY CONSENSUS. THIS COMMITTEE, LIKE OUR CONGRESSIONAL COMMITTEES HERE, WILL HAVE A STRONG VOICE IN THE MANAGEMENT OF THE REGIME.

- ENSURE THAT FUTURE AMENDMENTS TO THE REGIME COULD NOT BE ADOPTED OVER U.S. OBJECTIONS.

- ELIMINATE PROVISIONS COMPELLING THE TRANSFER OF SEABED MINING TECHNOLOGY.

- ELIMINATE THE POWER OF THE ORGANIZATION TO LIMIT PRODUCTION FROM THE SEABED TO PROTECT LAND-BASED MINING AND, IN ITS PLACE, ESTABLISH RESTRICTIONS ON SUBSIDIZATION OF SEABED MINING BASED ON GATT.

- GRANDFATHER IN SEABED MINE SITE CLAIMS BY THREE U.S.-LED MULTINATIONAL CONSORTIA ON TERMS NO "LESS FAVORABLE THAN" THE BEST GRANTED TO JAPANESE, FRENCH, RUSSIAN, INDIAN OR CHINESE CLAIMANTS WHICH HAVE ALREADY BEEN REGISTERED.

- ELIMINATE LARGE ANNUAL FEES MINERS WOULD HAVE TO PAY PRIOR TO COMMERCIAL PRODUCTION.

- REMODEL THE ENTERPRISE BY: 1) REQUIRING A FUTURE DECISION BY THE EXECUTIVE COUNCIL TO MAKE IT OPERATIONAL; 2) SUBJECTING IT TO THE SAME REQUIREMENTS AS OTHER COMMERCIAL ENTERPRISES; 3) ELIMINATING THE REQUIREMENT THAT PARTIES TO THE CONVENTION FUND ITS MINING ACTIVITIES; 4) PROVIDING THAT IT OPERATE THROUGH JOINT VENTURES WITH OTHER COMMERCIAL ENTERPRISES; AND 5) ELIMINATING PROVISIONS THAT WOULD COMPEL OTHER COMMERCIAL ENTERPRISES TO PROVIDE IT WITH TECHNOLOGY.

MR. CHAIRMAN. THIS IS QUITE AN ADVANCE. THE NEGOTIATIONS ARE NOT QUITE FINISHED, BUT THEY MAY BE CONCLUDED BY THIS SUMMER. IF SO, THE FINAL TEXT OF THE AGREEMENT TO AMEND PART XI WILL NEED TO BE EVALUATED BEFORE A FORMAL DECISION IS MADE TO SIGN. HOWEVER, OUR PRELIMINARY EVALUATION OF THE TEXT IS FAVORABLE. WE BELIEVE IT SATISFIES OUR PRIMARY OBJECTIONS TO

PART XI AND ESTABLISHES AN INTERNATIONAL MINING REGIME FOR THE SEABED THAT MEETS OUR BASIC CONCERNS. IF THE ADMINISTRATION DECIDES TO SIGN THE AGREEMENT MODIFYING PART XI, IT WOULD BE SUBMITTED ALONG WITH THE CONVENTION TO THE SENATE FOR ADVICE AND CONSENT TO RATIFICATION.

FINALLY, I WOULD LIKE TO BRIEFLY ADDRESS THE QUESTION OF IMPLEMENTING LEGISLATION FOR THE SEABED MINING AGREEMENT AND THE REMAINDER OF THE CONVENTION. WITH REGARD TO THE SEABED MINING AGREEMENT, THE DEEP SEABED HARD MINERALS RESOURCES ACT DOES ANTICIPATE THE POSSIBILITY OF THE ENTRY INTO FORCE OF A COMPREHENSIVE LAW OF THE SEA TREATY FOR THE UNITED STATES. IT PROVIDES IN SECTION 202 FOR EXISTING REGULATIONS UNDER THE ACT TO CONTINUE TO THE EXTENT NOT INCONSISTENT WITH THE TREATY AND EXPRESSES THE INTENT THAT THE DEPARTMENT OF STATE WORK WITH THE COMMERCE DEPARTMENT TO ENSURE TO THE MAXIMUM EXTENT PRACTICABLE THAT U.S. LICENSED ACTIVITIES CONTINUE UNINTERRUPTED. A QUESTION ARISES WHETHER SUFFICIENT DOMESTIC LEGAL AUTHORITY EXISTS PRESENTLY TO ALLOW THE U.S. TO PERFORM ALL THE OBLIGATIONS IT WOULD UNDERTAKE UNDER THE AGREEMENT MODIFYING PART XI. THIS AND RELATED QUESTIONS WILL REQUIRE FURTHER STUDY. THE SAME IS TRUE CONCERNING A NUMBER OF ISSUES FOUND IN THE REMAINDER OF THE CONVENTION. WE WILL BEGIN A SERIOUS REVIEW OF THE QUESTION OF THE NEED FOR IMPLEMENTING LEGISLATION NOW THAT WE CAN SEE SOME LIGHT AT THE END OF THE TUNNEL. I BELIEVE WE WOULD ALL BE SURPRISED IF SOME CHANGES IN U.S. DOMESTIC LAW WOULD NOT BE REQUIRED IN THE CONTEXT OF BECOMING PARTY TO THE LAW OF THE SEA CONVENTION, AS AMENDED.

THANK YOU FOR THIS OPPORTUNITY. I WOULD BE HAPPY TO ANSWER ANY QUESTIONS YOU MIGHT HAVE.

STATEMENT OF
DR. DAVID EVANS
SENIOR SCIENTIST, NATIONAL OCEAN SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO
AND THE OUTER CONTINENTAL SHELF
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES

APRIL 26, 1994

Mr. Chairman and Members of the Subcommittee:

I am David Evans, Senior Scientist of the National Ocean Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

I am pleased to appear before this Subcommittee to address the role of the National Oceanic and Atmospheric Administration (NOAA) as defined by the Deep Seabed Hard Mineral Resources Act (DSHMRA), how NOAA has been implementing these responsibilities and how NOAA views its future activities under the DSHMRA. I will also address how recent efforts to resolve objections by the United States and other industrialized nations to the deep seabed mining provisions of the United Nations Convention on the Law of the Sea may affect the DSHMRA.

The Deep Seabed Hard Mineral Resources Act was enacted, during 1980, to achieve three major objectives. The first was to create a stable domestic legal regime under which U.S. citizens could continue to conduct seabed mining development and exploration

activities, consistent with environmental and other relevant concerns. The second was to encourage negotiation of a broadly acceptable Law of the Sea (LOS) Treaty, and the third was to provide a smooth transition from the domestic regime to an acceptable international regime. Under the Deep Seabed Hard Mineral Resources Act, NOAA is responsible for:

- issuing licenses for exploration (which includes further at-sea research and development) with appropriate terms, conditions and restrictions.

- issuing permits for commercial recovery with appropriate terms, conditions and restrictions.

- monitoring the diligence and activities of licensees and permittees, including suspending activities if necessary to prevent a significant adverse effect on the environment or to preserve life and property at sea.

- conducting a continuing program of environmental research to provide assessments of potential impacts, the results of which are needed for future regulatory terms and decisions.

- designating, in consultation with the Secretary of State, as reciprocating states foreign nations with compatible domestic regimes for mutual recognition of licenses and permits.

- participating in efforts leading to and implementing an acceptable international legal regime for seabed mining.

During 1984, NOAA issued exploration licenses to four U.S.-based, multi-national consortia for sites in the Clarion-Clipperton Fracture Zone area of the near-Equatorial North Pacific Ocean. The area of greatest commercial interest is about 1,500 nautical miles southwest of San Diego and about 1,000 miles south of Hawaii. The four consortia, namely the Kennecott Consortium (KCON), Ocean Management, Inc. (OMI), Ocean Minerals Company (OMCO), and Ocean Mining Associates (OMA), had performed considerable research and development on the technologies needed to recover manganese nodules from water depths of 4,000 to 5,000 meters and to process them into economically important products. OMI, OMCO and OMA all tested integrated nodule collector and lift systems at sea during the late 1970's and KCON tested components. All developed processing techniques to recover copper, nickel and cobalt and some or all of the manganese. During May 1993, the KCON surrendered its license to NOAA, because of a change in business strategy and concerns over the future legal regime for

commercial operations. During June 1993, OMCO applied for a license for the Kennecott area.

Currently, the efforts of the licensees have been scaled back until there are indications that metal markets, particularly for nickel, are recovering. When markets are sufficiently recovered, the licensees may engage in further, larger scale R&D or build truncated systems of commercial-scale components which will be expanded into a full commercial system as the components are perfected. At the present time, there are no good estimates of when development efforts will resume.

NOAA has been at the forefront of deep seabed environmental research since as early as 1972. Probably NOAA's most visible seabed mining environmental research effort was the Deep Ocean Mining Environmental Studies (DOMES) Project which formally began during 1975 and continued through 1980. The research was conducted in the Clarion-Clipperton Fracture Zone area, the area which contains the areas of initial commercial interest. This is also the area where the United States, China, France, Germany, Japan, Russia, the United Kingdom and an eastern European consortium, InterOceanMetal, have signed agreements to respect each other's minesites.

NOAA's research included monitoring OMI's, OMCO's and OMA's at-sea tests. NOAA also conducted, in cooperation with other

agencies and the State of Hawaii, research into the possible onshore impacts of manganese nodule processing and associated activities. Although there are still uncertainties regarding potential effects on tuna larvae, the overall significance of upper water column effects was considered low in NOAA's 1981 Final Programmatic Environmental Impact Statement. The major uncertainties remaining were associated with the effects of the near bottom sediment plume which will be generated by the device which collects the nodules.

Because the sediment is so fine, the plume's effects, such as covering food supplies, or clogging respiratory surfaces of filter feeders, could be widespread. Thus, NOAA began investigating the effects of this plume in a multi-year, multi-national Benthic Impact Experiment (BIE) in cooperation with Russia's Ministry of Geology. In the BIE, NOAA is using a Deep Seabed Sediment Resuspension System, which is called the "Disturber." The Disturber is basically a deep-water, remotely controlled sled, which uses pumps to resuspend sediments in a manner which simulates the plume that would be generated by the nodule collector.

The BIE formally began during 1991 when the Russian research ship YUZHMORGEOLOGIYA was used to first test the Disturber and then to recover and deploy instrumentation moorings in the research area, collect additional baseline data, and tow the Disturber to

blanket the study area with sediment. Technical problems, first with a key winch on the ship during 1991 and then with the Disturber during 1992, resulted in inadequate blanketing. During early 1993, the Disturber was reconfigured and used during August and early September of 1993 to generate the sediment plume in the research area. Preliminary results indicate that the operation was successful.

NOAA's plan is to return to the research area during June 1994 to measure the pattern and depth of the burial achieved and to take biological samples in the impact area and a nearby control area. NOAA will also be sending an observer for a similar Japanese experiment being performed with NOAA's Disturber from the Russian research ship. Beyond this, NOAA plans to have a thorough scientific review of the research before deciding its future. While the direction and content of the research was endorsed at a January 19,1994 Deep Seabed Mining Program Review Workshop held here in Washington, D.C., it is believed from the discussions, and because of the costs involved, that a more focused review of the research objectives and plan would be worthwhile. We expect to complete this review by the end of the summer.

NOAA is being cautious about resources that it can commit to deep seabed mining because it is faced with many competing demands for resources and has concerns that various technologies could change enough between now and when commercial operations are feasible

that the results of research performed now would be rendered obsolete. NOAA will be reviewing relevant technologies and will reconsider its environmental research program based on this and when the future of industrial development is clearer.

Under the DSHMRA, NOAA has continuing authority to process the exploration license application from OMCO and to monitor the activities of licensees. NOAA intends to continue conducting these activities using base resources, without further appropriations under the DSHMRA.

With respect to an international regime, for over three years now NOAA has supported the DSHMRA's goal of achieving a universally acceptable Law of the Sea Convention by participating in efforts, under the auspices of the Secretary-General of the United Nations, to resolve objections of the United States and other industrialized nations to the deep seabed mining provisions of the 1982 United Nations Convention on the Law of the Sea (LOS). The DSHMRA itself indicates Congressional views regarding elements of an acceptable seabed mining regime. The existing LOS Convention's provisions were seen to be limiting to private enterprise and free market principles as well as not assuring that the views of affected interests, such as those of the United States, would be taken into account. NOAA defers to the Department of State to describe the status of these negotiations and to the mining industry witnesses to describe the industry's

views on the treaty and the renegotiation effort. NOAA will limit its comments to the relationship of the Deep Seabed Hard Mineral Resources Act to any agreement which is reached regarding modification of the Convention.

In the DSHMRA's statement of findings and purposes and again in Title II, it is clear that the DSHMRA was designed as an interim measure which would serve both as a secure basis for continuing activities and a "bridge" for smooth transition to a broadly acceptable international agreement covering deep seabed mining. If the current negotiations are successful, the United States will still need this "bridge" until the modified Convention is ratified and enters into force with respect to the United States.

In reviewing the DSHMRA, it appears that no near-term changes would be required if an acceptable agreement was to be concluded. Working with the State Department, industry and other interested and affected parties, NOAA would review the potential new international regime as well as the projected international start-up actions to determine how the DSHMRA should be modified for the long run. If an agreement on modifications to the LOS Convention is reached, it could still be some time before the United States would make a definitive decision on participation in the Convention regime.

As noted previously, NOAA has continuing authority under the DSHMRA to conduct necessary activities, and intends to do so using base resources. In response to the Subcommittee's question about potential authorization funding levels and time periods, NOAA cannot at this time take a position on funding levels beyond FY 1995.

Mr. Chairman, this concludes my testimony. I thank you for this opportunity to address NOAA's role and activities in the area of deep seabed mining. I would be pleased to respond to any questions you or other members of the Subcommittee may have.

STATEMENT FOR THE RECORD

CAPTAIN RICHARD B. SCHIFF

JAGC, U.S. NAVY

ASSISTANT JUDGE ADVOCATE GENERAL (CIVIL LAW)

BEFORE THE

OCEANOGRAPHY, GULF OF MEXICO AND

THE OUTER CONTINENTAL SHELF SUBCOMMITTEE

OF THE

HOUSE MERCHANT MARINE AND FISHERIES COMMITTEE

26 APRIL 1994

CAPT RICHARD B. SCHIFF, JAGC, USN

Captain Richard B. Schiff attended public school in Michigan, thereafter receiving a B.A. degree from the University of Michigan, Ann Arbor, in 1966, and a J.D. (with honors) from the National Law Center, George Washington University, in June 1969.

Following completion of Officer Indoctrination School and Naval Justice School in Newport, Rhode Island, in March 1970, Captain Schiff reported to the District Legal Office, First Naval District, Boston, where he served as a general attorney until February 1972. From 1972 to 1975, he was assigned to the Office of the Force Judge Advocate, Commander Amphibious Force, Pacific/Commander Naval Surface Force, Pacific and to additional duty as legal advisor for Naval Special Warfare Group 1. In August 1975, Captain Schiff began a four year tour of duty as a military judge in the Transatlantic Judicial Circuit, based in Naples, Italy.

During the 1979-1980 academic year, Captain Schiff studied Ocean Law at the University of Virginia, Charlottesville, and was awarded the LL.M. degree. From July 1980 to July 1981, Captain Schiff served as base legal officer at Naval Station Keflavik, Iceland. In July 1981, he became the staff judge advocate for Commander Iceland Defense Force/Commander Fleet Air Keflavik, a position he held for a year. Captain Schiff was next assigned as executive officer, Naval Legal Service Office, Pensacola, from July 1982 until July 1985.

In August 1985, Captain Schiff assumed duties in the Office of the Chief of Naval Operations as Legal Advisor and Assistant Branch Head, Ocean Policy Branch (OP-616), Politico-Military Policy and Current Plans Division, with additional duty as legal advisor to the Deputy Chief of Naval Operations for Plans Policy and Operations (OP-06L).

From July 1988 to July 1991, Captain Schiff served as Commanding Officer, Naval Legal Service Office, Naples, Italy.

From August 1991 to February 1994, Captain Schiff was assigned to the position of Director of Legal Affairs, Supreme Allied Command, Atlantic with additional duties as Staff Judge Advocate to Commander in Chief, U.S. Atlantic Command, Commander in Chief, U.S. Atlantic Fleet and Commander in Chief, Western Atlantic area.

Selected by the Secretary of the Navy as the Assistant Judge Advocate General (Civil Law), Captain Schiff reported for duty in the Office of the Judge Advocate General in February 1994.

Captain Schiff is a member of the Virginia State Bar and the bar of the Court of Military Appeals. He is married to the former Judith Weil of Philadelphia. They have two children: Karen Freeman, who lives with her husband in Toledo, Ohio, and Daniel who attends the University of Virginia.

I would like to thank Chairman Ortiz and the Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf for the opportunity to testify. The Secretary of the Navy has asked that I participate in this hearing on his behalf.

Neither the Navy nor I claim any special expertise in the Deep Seabed Hard Minerals Resources Act. However, we have an abiding interest in global mobility and operational flexibility. We are also interested in avoiding conflict. The United States continues to encounter excessive maritime claims throughout the world. Coastal States make illegal claims to sovereignty and jurisdiction over ocean areas that, if not countered, could constrain our ability to operate freely. In my testimony, I will emphasize the Navy's interest in reaching international agreement on the legal regime governing the oceans. If reached, we expect that such an agreement will produce greater stability in ocean affairs and enhance national security.

Over 11 years ago, this nation decided not to sign the 1982 UN Convention on the Law of the Sea largely because of our objections to various deep-seabed mining provisions in Part XI. However, at every opportunity the United States expressed its strong support for the provisions concerning traditional uses of the sea. Indeed, we have shaped our oceans' policy around those portions of the Convention, including freedom of navigation and overflight rights. We have long argued that they reflect an appropriate "balance of interests" which the international community had accepted in both theory and practice.

However, we saw this balance with respect to the navigational article expressed not as a matter of treaty obligation, but as a reflection of customary international law. The question we face

today is whether a customary-law-based oceans policy can continue to serve U.S. navigational interests in a changing international political environment, or whether a more secure, treaty-based policy is necessary.

DoD and Navy have long been major proponents of the position that the United States can best assure our interests within the LOS Convention framework, rather than on the outside looking in. In several recent policy reviews the Department of Defense emphasized a vital, long-standing U.S. policy position: that a comprehensive, widely accepted, and stable legal regime for the world's oceans which safeguards navigation and overflight rights is an essential element of U.S. defense strategy.

The U.S. Navy believes in a strong and effective oceans policy. The end of the Cold War has not changed the fact that many of our allies and interests are located far away from the United States. Downsizing our armed forces, coupled with reduced forward basing, means that we must have substantial air and sealift capabilities to enable our forces to be where and when required, with the resources they need. An essential element of this sealift requirement is the assurance that key sea and air lanes of communication will remain open as a matter of international legal right. It is not an acceptable option that they be open at the sufferance of coastal and island States along the route and in the area of operations, or because we have the military strength to keep them open. Without continued international respect for freedoms of navigation and overflight, the response times of U.S. (and allied/coalition) forces would lengthen, deterrence would weaken, and forces might well arrive on scene too late to make a difference. Such a situation would undermine our ability to influence the course of events overseas. A 1992 report which the

Navy prepared entitled . . . *From the Sea* recognizes that naval effectiveness also depends upon the capability to project power and maintain naval presence:

> Naval expeditionary forces are . . . [u]nrestricted by the need for transit or overflight approval from foreign governments in order to enter the scene of action. The international respect for freedom of the seas guarantees legal access up to territorial waters of all coastal countries of the world. This affords Naval Forces the unique capability to provide peaceful presence in ambiguous situations before a crisis erupts.

I might add that one should not view the importance of the freedoms of navigation and overflight from a naval perspective alone. As the U.S. Armed Forces have downsized and become more joint, all services recognize that freedoms of navigation and overflight are vital not only to the sustainment of forward-based forces, but also to the ability to project U.S. Forces overseas, and, if required, ashore. The development of the concept of the Joint Task Force, in which the Army, Navy, Air Force and Marines, even the Coast Guard, are deployed and employed as a team, has brought home to the entire defense establishment the importance of navigational and overflight freedoms to the accomplishment of our national security mission.

Navigational freedom has an economic component as well. The dynamics of international trade and finance and their impact on economic growth have, in recent decades, added new and critically important dimensions to national security. U.S. economic growth is closely linked to the world economy, an important element of which is trade carried on and over the world's oceans. International seaborne commerce exceeds 3.5 billion tons annually and accounts

for 80 per cent of trade between nations. Manufacturing is increasingly an international enterprise. The cost burden of large inventories, coupled with advanced production facilities, dictate that processed materials and finished parts arrive at the time and place specified. For example, U.S. exporters require an air and sea bridge linking their value added facilities in the United States with distant suppliers over which flow raw materials, engineered components, and the finished product.

In sum, free and unimpeded seaborne and airborne commerce are essential to the U.S. national security and economic well-being, as well as to global economic growth that provides a foundation for international peace and security. Ensuring navigation and overflight rights is central to these objectives. To be successful, the United States must take the lead to achieve a widely accepted international order to regulate and safeguard, as justly and fairly as possible, the many diverse activities and interests of nations regarding the oceans -- an area that encompasses approximately 70 per cent of the earth's surface.

In the past we have maintained this leadership by actively challenging excessive maritime claims, thereby standing up to a problem we call "creeping jurisdiction." Excessive claims are manifested in several ways. But in each case, we base our evaluation as to whether or not they are excessive by measuring them against the relevant provisions of the 1982 Convention. They include: territorial sea claims greater than 12-nm in breadth; improperly drawn baselines from which the breadth of the maritime zones are measured; impermissible restrictions on innocent passage, transit passage, and archipelagic sea lanes passage; and other claims to jurisdiction beyond the territorial sea, such as security zones, that impinge on traditional high seas freedoms of navigation

and overflight. Navy operators must deal with these illegal claims every day.

U.S. policy and practice is to counter these claims -- diplomatically and operationally -- on a bilateral, case-by-case basis, underscoring their incompatibility with the relevant provisions of the Convention. While this approach has served U.S. national security interests to date, there is no guarantee it will continue to do so.

Indeed, the political, economic and military changes in the global scene over the past decade alone justify a fresh look at the role our ocean policy plays in meeting the many and diverse challenges facing the United States into the next century. This global change includes: (1) the altered threats to U.S. security posed by the end of the Cold War; (2) the dissolution of the Soviet Union as it has been known for the past 70 years and, at the same time, the emergence of independence in the eastern European states formerly under Moscow's sway; (3) the concomitant rise of regional powers, many with sophisticated, high-technology weapons and the will to use them; (4) the downward pressure on U.S. defense resources reducing force structure, including overseas bases; and (5) the growth of political and economic interdependence among nations. All these factors point to an era in which we must seek cooperative solutions for mutual problems. If the United States does not become a party to the 1982 Convention, the future role of the United States in international ocean policy is uncertain. How will other nations react to our prolonged non-participation in the Convention and the long-standing international leadership role of the United States in ocean policy affairs? How will we manage the increasing uncertainty of maintaining the fragile balance of rights and responsibilities established by the Convention? In the absence

of a widely acceptable international agreement on the law of the sea, will "jurisdictional creep" cause our fundamental assumptions about freedom of navigation and overflight to unravel?

Some may suggest that the best approach is to continue adhering to a U.S. ocean policy based on the argument of customary international law, backed by a strong Navy. They feel that, as a maritime power, with the overseas interests and responsibilities that such status entails, the United States has the will and capability to press its rights unequivocally and unilaterally when obstacles to traditional ocean freedoms are encountered.

Although a number of nations have, in the past, accepted our refusal to sign the Convention and our decision to pursue an ocean policy based on customary law, there remains continuing criticism of the U.S. position from other States. Some of the States which have signed, ratified, or acceded to the Convention either front on or lie astride of important waterways used for international transit. Some of these assert that the Convention is a legal contract, the rights and benefits of which are not available to non-parties. Some of these have air, surface, and subsurface capabilities, including anti-ship missiles, mines, and torpedoes, which represent a threat to transiting ships.

Indeed, the argument that the relevant provisions of the 1982 Convention reflect customary law and that we need not ratify it to benefit from its provisions is becoming increasingly questioned by some vital centrist States. For example, in recent international meetings some delegates have expressed the opinion that only parties to the Convention are competent to interpret its terms. If we reject the Convention again, that sentiment may grow. Indeed, some of our maritime allies may not support our interpretations if we again refuse to sign.

Customary international law results from a general and consistent practice among nations followed by them from a sense of legal obligation. It is a principal source of international law and is binding on all nations. Yet, there are problems with relying exclusively on customary international law. For example, it is viewed by many as inherently unstable, malleable, and often "fuzzy around the edges." Some developing countries reject the concept of customary international law at all. They view it as a body of law, frequently formulated without their participation and consent, which promotes the interests of the developed nations -- often former colonial powers -- without fully considering and reflecting those of the developing world. Developing countries prefer the relative certainty of international agreements, arrived at and observed on the basis of equality among nations -- "one country, one vote." Few States (e.g., Iran) have taken the position that certain provisions of the 1982 UN Law of the Sea Convention that are important to the U.S. (e.g., transit passage, archipelagic sea lanes passage) are strictly contractual under the Convention and are not part of existing or developing customary international law.

An additional problem with viewing the 1982 Convention as customary international law will arise if the Convention is not widely accepted. Due to increasing demands upon ocean resources, the delicate compromises achieved in the 1982 Convention may unravel and State practice may begin to diverge from today's patterns. We may encounter bolder challenges to concepts currently taken for granted. Ultimately, having lost international consensus over vital rights and obligations contained in the Convention, we will be hard pressed to argue it continues to reflect customary

law. The opportunity for a stable ocean regime will have been lost.

By contrast, the 1982 Convention takes most of the guess work out of interpreting the finer details of the law. It is a comprehensive international treaty, embracing virtually all important uses of the ocean. Without going into great detail, the Convention is in the best interests of the United States because it:

- Guarantees freedom of navigation and overflight on and over the high seas for military and civilian ships and aircraft alike;

- Defines the standards for establishment of baselines from which the various zones (the territorial sea, the contiguous zone, etc.) are measured;

- Defines each zone, and specifies the rights and duties of the coastal, flag, and port States and maritime uses in each;

- Affirms the right of "innocent passage" through territorial seas for military and commercial ships (but not for aircraft and submerged submarines);

- Articulates the rights of "transit passage" in international straits, and "archipelagic sea lanes passage" through archipelagic waters for all aircraft and ships, including submerged submarines;

- Recognizes the right of coastal states to claim a 12-nm territorial sea, a 24-nm contiguous zone, and a 200-nm exclusive

economic zone (EEZ) for resource-related development, environmental protection and other purposes;

• Strikes a careful "balance of interests" between coastal state rights and duties and those of the international community in offshore zones under national jurisdiction. For example, in territorial seas of up to 12-nm, coastal States must respect the right of foreign nations to innocent passage in conformity with the Convention and other rules of international law. They must also respect foreign States' exercise -- compatible with other convention provisions -- of the high seas freedoms of navigation and overflight in the EEZ. On the other hand, maritime nations must respect coastal State environmental laws that do not exceed the Convention's limitations.

Remaining outside the treaty environment, the United States would have the will and capability to "go it alone" on the oceans if necessary, accepting the risk and political cost involved in continuing to assert its traditional ocean freedoms under customary international law. Unlike the decade of the 1980's, however, when circumstances frequently demanded that the U.S. steadfastly adhere to policies which diverged from the majority view of a bi-polar oriented world community, the 1990's have demonstrated the need for a different brand of leadership -- one based on building respect in the world community for the rule of international law and support for cooperative efforts among nations to resolve their most difficult problems. As the preeminent global power of the 1990's and beyond, the United States is uniquely fitted to assume the mantle of leadership in the development of the rule of law applicable to the world's oceans. That leadership can be best

exercised through a broadly accepted law of the sea convention. The 1982 Law of the Sea Convention provides that best hope for gaining global acceptance and offering long-term stability for ocean use.

Thank you for your attention. I will be glad to try to respond to any questions you may have.

Testimony of Myron H. Nordquist

Submitted to the

Subcommittee on Oceanography,

Gulf of Mexico and the Outer Continental Shelf

Committee on Merchant Marine and Fisheries

U.S. House of Representatives

April 26, 1994

Mr. Chairman:

Thank you for the opportunity to appear before your Subcommittee to testify on the Law of the Sea Convention and the Deep Seabed Hard Minerals Resources Act. My name is Myron H. Nordquist and I teach law at the United States Air Force Academy. I appear in my personal capacity and not as an official spokesman for any entity of the United States Government.

The subject of this hearing requires the Members of your Subcommittee to evaluate three documents: The 1982 United Nations Convention on the Law of the Sea (UNCLOS), The Deep Seabed Hard Minerals Resources Act (DSHMRA) and the Agreement Relating to the Implementation of Part XI of the 1982 United Nations Convention on the Law of the Sea ("Boat Paper"). Negotiations currently underway at the United Nations are focused on this latter document which was circulated with a sketch of an ocean mining vessel on its cover (thus , the label "Boat Paper"). The fourteen rounds of "Boat Paper" negotiations have resulted in agreement to adjust the current UNCLOS arrangements to accommodate United States objections to Part XI. Participants predict that a consensus "Boat Paper" text will be finalized by the end of May. The plan is to transmit this agreement to all States for signature. An accompanying United Nations Resolution would apply the "Boat Paper" Agreement "definitively and provisionally from entry into force of the Convention on 16 November 1994." Since the

United States neither signed nor ratified the UNCLOS, our government must decide whether to accede to both the UNCLOS and the "Boat Paper" Agreement.

This Subcommittee must also decide, in light of the entry into force of UNCLOS and the "Boat Paper Agreement", whether to reauthorize the DSHMRA, with or without modification. Before these judgments can be made, United States government officials need to better understand the substantive content as well as procedural relationships of the relevant LOS documents.

Law of the Sea Convention

In 1982, the Third United Nations Conference on the Law of the Sea adopted the United Nations Convention on the Law of the Sea. Despite having initiated and led the LOS negotiations for over a dozen years, an early U.S. decision in the Reagan Administration was that the United States would not sign the Convention due to objectionable provisions pertaining to deep seabed mining.

The irony is that paramount interests of the United States are accommodated in the Convention: navigation and overflight, fisheries conservation and management, and the marine environment. Contrary to all the attention it has received, deep seabed mining is not an important interest for the United States. Instead, the United States needs the Convention for its national security provisions and for the foundation the Convention provides to protect fisheries and environmental interests.

Navigation and Overflight

The right of transit over, on or under international straits for American ships and aircraft is guaranteed by Part III of the Convention. No notice or permission is required to go through these strategically vital ocean constrictions. The mobility and secrecy required for our military vessels and airplanes is safeguarded by the express law in the Convention. The coastal State cannot legally pass judgment on the exercise of this right. There are those who argue that military powers will "blast" through international straits or that they have clear "historic rights." I doubt there is specific evidence to support such positions. American practice is to avoid confrontations, especially when outmanned-as individual aircraft and vessels often are. Convention transit rights are legally clear; non-convention transit rights are fraught with controversy. In my opinion, the practical value of the national security safeguard for transit through straits in the Convention by itself outweighs the theoretical drawbacks of the deep seabed mining provisions in the Convention. The relative importance of the two interests must be evaluated because the United States must take or reject all of the UNCLOS as revised. No reservations are permitted by the express terms of the LOS Convention.

Many choose to overlook that most coastal States favor notification for foreign warships planning to pass through their territorial seas and straits. Those who think that reliance on customary law can safeguard U.S. navigation rights risk shortshrifting fundamentally important national security requirements of the United States. The majority of coastal States will continue to demand notification for warships in the absence of a clear treaty provision authorizing transit or passage without notification.

The LOS Convention provides ships in the territorial sea with an express right to continuous and expeditious passage that is not prejudicial to the peace, good order, or security of the coastal State. These favorable innocent passage provisions for both commercial and military vessels in the Convention also, by themselves, in my view, outweigh philosophical objections to Part XI.

Part IV of the LOS Convention creates a new regime for archipelagic States such as the Bahamas, Indonesia and the Philippines. These island nations are spread over vast expenses of the oceans, including many strategic ocean channels - some not far from America's shores. The Convention expressly provides for archipelagic sea lanes passage whereby both military and civilian ships and aircraft can navigate and overfly in their normal modes. This means, for example, that submarines may continuously and expeditiously transit submersed and that military aircraft may overfly archipelagic sea lanes. These fundamentally important national security interest are satisfactorily accommodated in the LOS Convention. Even the most ardent proponents of the oxymoron "instant customary law" would have difficulty convincing anyone that State practice with respect to archipelagoes will maintain the acceptable balance found in the LOS Convention without the binding force of its specific language that was so carefully negotiated over a dozen years. Outside of UNCLOS, it is fully predictable that the archipelagic States, whose status is now widely recognized, will unilaterally construe what are "normal routes of international navigation" in the narrowest conceivable way. In my view, U.S. national security interests with respect to archipelagic sea lanes passage are far better served by the clear provisions in the LOS Convention than they are by reliance on unilateral State practice.

Beyond straits, territorial seas and archipelagoes, are 200-mile exclusive economic zones and the high seas proper. The biggest accomplishment of the Law of the Sea Convention was to reconcile coastal State economic interests with other State's navigation and overflight interests in the 200-mile offshore area. Was the basic deal a good one? I believe it was. The United States gains more 200-mile area than any other nation under the LOS Convention while simultaneously halting the trend toward 200-mile territorial seas that would cripple the worldwide mobility of military vessels and aircraft. If the United States rejects the LOS Convention, our nation will lack credibility to protest incremental coastal State restrictions on navigation and overflight that will accumulate over time. Individual challenges that erode U.S. navigation and overflight rights will often be too trivial to merit formal protest at the time. State practice demands constant vigilance and consistent actions. Absent a binding convention, coastal States will inevitably move only in directions that curtail ocean freedoms. Once lost, these freedoms are virtually unrecoverable. To cope with this "creeping" jurisdiction, the United States needs not only the express legal text of Parts V (Exclusive Economic Zone") and VI ("Continental Shelf") but also the moral persuasive force of being a party to a widely accepted international agreement. All nations recognize the fundamental principle of justice that one cannot take the benefits without the detriments. The years of LOS negotiations involved much "give" and "take." A "deal" was finally struck on the entire Convention. Those who argue that the United States can claim the national security and EEZ benefits of the LOS Convention without accepting deep seabed detriments will be seen as acting in bad faith by attempting to gain an unfair advantage.

Fisheries Conservation and Management

The fish catch in the world's oceans has been declining for five years and the outlook for the future is bleak. As a finite resource, fisheries are a true "tragedy of the commons." There is no end in sight for the downward spiral in productivity caused by overfishing and pollution. A new epoch in the evolution of ocean fishing must begin: fishermen must transition from being free hunter-gatherers to being regulated. Others have detailed the global, regional and local mismanagement of fisheries taking place on a catastrophic scale. But internationally accepted rules to conserve and manage fisheries are needed now more than any time in world history.

The LOS Convention provides the only comprehensive foundation upon which a recovery of the world's fisheries can be built. While a coastal State generally has sovereign rights over the living resources off its shores out to 200-miles, the coastal State also has a duty to conserve and manage these resources while cooperating with other affected fishing nations. Beyond the 200-mile zone, all States are given the right to fish, subject to the duty to conserve the living resources of the high seas and to cooperate with other States to achieve this purpose. The Convention guarantees foreign fishing vessels the right of innocent passage through territional seas as well as international straits. A coastal State may, however, set conservation rules and prevent the infringement of its fishing regulations in its territorial sea. Key limitations, consistent with American Constitutional law, are placed on coastal State criminal and civil jurisdiction over foreign ships and persons in the territorial sea. The rules for fishing vessels in archipelagic waters are similar to those applicable in the territorial sea. The major exception in archipelagic waters pertains to special protection for existing fishing agreements and traditional fishing from an adjacent State.

Part V of UNCLOS covers the 200-mile Exclusive Economic Zone ("EEZ"). Article 56 grants the coastal State sovereign rights for the purpose of exploiting the living resources of the EEZ. It also provides that a coastal State, in exercising its rights and duties, give due regard to the rights of other States and act in a manner compatible with the LOS convention. Coastal States and competent international organizations e.g. FAO are to cooperate to this end.

Article 61, paragraph 1, provides that the coastal State shall determine the allowable catch of EEZ living resources. Paragraph 2 obligates a coastal State, based on the best scientific evidence available, to conserve and manage the living resources in its EEZ to ensure they are not endangered by over-exploitation. Conservation and management measures must be designed to maintain stock levels that will produce the maximum sustainable yield. The maximum sustainable yield is qualified by relevant environmental and economic factors, the interdependence of stocks, and "any generally recommended international minimum standards...." The coastal State is to consider effects on associated or dependent species to keep them above levels at which their reproduction may become seriously threatened. Relevant conservation data is to be shared through FAO and other international organizations with interested States.

Article 62 provides for the objective of optimum utilization of the EEZ living resources. The article outlines the rules for access to the surplus of the allowable catch by foreign fisherman when a coastal State does not have the capacity to harvest it.

Article 63 is addressed to straddling stocks, that is, fishery stocks that occur within the EEZ's of several States as well as on the high seas proper. Coastal and fishing States are directed to agree upon measures to coordinate and insure their conservation and development. Highly migratory species (mostly tunas) are covered in Article 64. The LOS Convention directs coastal and other States fishing for highly migratory species to cooperate to ensure conservation and to promote optimum utilization throughout the region, both within and beyond the EEZ . Such States are to act through regional or international organizations. Article 65 allows a coastal State or an international organization, as appropriate, to regulate marine mammals more strictly than fish. Cetaceans, in particular, are cited for conservation, management and study through international organizations.

Anadromous stocks (e.g. salmon) are placed under the regulatory authority of the State of origin by Article 66. The State of origin has the primary responsibility to ensure conservation and, after consultations with other States fishing these stocks, to establish total allowable catches for all stocks originating in its rivers. The State of origin and other States fishing anadromous stocks, are to implement the UNCLOS rules governing anadromous stocks through regional organizations.

Part VI of the UNCLOS defines the continental shelf to extend to at least 200 miles and, beyond that, to the outer edge of the continental margin. The LOS Convention recognizes that the coastal State exercises sovereign rights on the continental shelf over both non-living/ mineral resources and living resources belonging to sedentary species. Sedentary species include crab and lobster which, at the harvestable stage, either are immobile on or under the seabed, or are unable to move except in constant physical contact with it.

Part VII of the LOS Convention relates to the high seas area beyond the 200-mile EEZ. Article 87 expressly provides that the high seas are open to all States. Freedom of the high seas includes the freedoms of navigation, overflight, scientific research and fishing. Articles 116-120 specifically provide for the conservation and management of the living resources of the high seas. Nationals of all States have the right to engage in fishing on the high seas as well as the duty to conserve the living resources there. In this latter regard, those exploiting the same stock or fishing in the same area are to negotiate necessary conservation measures. Where appropriate, States are to cooperate to establish regional fisheries organizations. Article 119 details how conservation of high seas living resources is to be implemented.

Given the tragic depletion of fish stocks throughout the world's oceans, the duties the LOS Convention imposes to conserve fishery stocks on the high seas are alone more important than any distasteful deep seabed mining provisions. Deep sea fishing, unlike deep seabed mining, is a very important economic interest of the United States. The LOS Convention is the only foreseeable legal foundation to reduce the global decline in fisheries.

Attached to this statement is the most current version of the revised negotiating text from the U.N. conference on straddling fish stocks and highly migratory fish stocks. This agreement, which is expressly built upon Parts V and VII of the LOS Convention, is convincing evidence that the UNCLOS is the only realistic springboard for regional agreements to achieve the fisheries conservation and management arrangements the international community so desperately needs.

Protection of Marine Environment

As was evident in the brief review of fisheries, international rules pertaining to the protection and conservation of the marine environment are woven throughout the entire fabric of the LOS Convention. Many of these rights and obligations reflect new or emerging principles or rules that are not yet part of customary international law. Accordingly, for an orderly incorporation of the specific provisions on protection of the marine environment into binding law, the United States must become a party to the LOS Convention. Despite all the publicity given to the Stockholm and Rio Conferences, the only comprehensive global environmental regime in hard law form is found in the LOS Convention. For those who are concerned with the preservation of "Planet Earth," the favorable marine environment provisions in the LOS Convention, by themselves, outweigh any unfavorable provisions on deep seabed mining. The LOS Convention is a balanced legal and institutional framework for developing more precise rights and duties to protect the global marine environment.

The LOS Convention defines pollution broadly as the introduction by man of substances or energy into the marine environment which results or is likely to result, in harm. The UNCLOS doctrine of innocent passage excludes any act of willful and serious pollution. Coastal States are allowed to adopt laws to conserve living resources and to preserve the environment in their territorial sea and contiguous zone. Ships exercising the right of transit in international straits and archipelagic sea lanes must comply with generally accepted rules for the prevention of pollution. States bordering international straits are empowered to adopt non-discriminatory rules giving effect to applicable international pollution regulations.

The coastal State has jurisdiction in its EEZ, in accordance with the LOS Convention, to protect and preserve the marine environment. The foregoing section on fisheries noted several of the conservation and management measures applicable in the EEZ with respect to various types of living resources. On the high seas, flag States must ensure their crews are conversant with marine pollution rules. They also must investigate casualties of their flag ships that cause serious damage to the marine environment. Obligations to conserve living resources on the high seas were noted above. In enclosed or semi-enclosed seas e.g. Gulf of Mexico, coastal States have a special duty to cooperate and coordinate in the management and protection of the marine environment.

Part XII of the LOS Convention consists of 45 articles and 101 specific paragraphs directly devoted to protection of the marine environment. Parties are to protect the marine environment through regulating polluting activities under their jurisdiction and by preventing trans-boundary damage to the environment of other States. All sources of pollution must be controlled, including damage caused by the introduction of alien species. Special protection is accorded to rare and fragile ecosystems as well as to the habitat of depleted, threatened or endangered species. Articles 197-201 contain obligations for global and regional cooperation in the establishment of international environmental rules, standards and recommended practices. States are to notify other nations of actual or imminent environmental threats, as well as join in formulating contingency plans for responding to pollution damage and threats. States are obliged to share scientific data and technical assistance. States are also to measure and evaluate the risks or effects of pollution, especially from activities they permit. If an activity is likely to harm the marine environment, the State with jurisdiction over the activity must assess the potential effects and publicize the findings.

Article 207-212 require States to take national measures to control pollution from land-based sources, seabed activities, dumping, vessels and atmospheric sources. For ocean areas beyond

exclusive national jurisdiction, international standards are to be developed and implemented e.g. IMO standards on vessel source pollution and marine safety. A carefully balanced regime for controlling vessel sources pollution allows freedom of navigation while protecting the coastal State's shoreline. Parties are actively to enforce national and applicable international standards for all sources of pollution under their jurisdiction. A complex allocation of enforcement responsibilities among the flag State, coastal State and port State ensures control of vessel-source pollution without unduly hindering maritime commerce.

Safeguards protect foreign vessels from abuse of authority by coastal and port States. Unnecessary delay of vessels is prohibited and due process procedures are included. In certain ice-covered areas, more stringent environmental protection is allowed as long as due regard is paid to navigation rights. States are responsible for their obligations and judicial recourse must be available for claims arising from damage to the marine environment caused by persons under their jurisdiction. States are to develop additional agreements on liability and compensation.

Article 236 expressly exempts from Part XII, warships, naval auxiliaries and other vessels or aircraft owned or operated by States only on government non-commercial service. Article 237 provides that other specific international environmental obligations are not to be prejudiced by the LOS Convention.

As is shown by the foregoing review, the LOS Convention provides a comprehensive basis for negotiating additional international agreements to preserve and protect the marine environment. This is another good reason for the United States to embrace the widely accepted rights and obligations in the UNCLOS, especially since those pertaining to the maine environment were painstakingly negotiated to balance the requirements of all ocean users.

Conclusion

Favorable provisions in the LOS Convention on navigation and overflight, fisheries conservation and management, and protection of the marine environment decisively outweigh unfavorable provisions on deep seabed mining. In addition, the Boat Paper Agreement is a good faith effort to accommodate each of the specific objections the United States articulated concerning the UNCLOS deep seabed text. Even if mining representatives are not satisfied by the Boat Paper, the United States ought to accede to the LOS Convention as revised because the overall national interests of the United States outweigh the deep seabed mineral interest. The DSHMRA is designed as an interim deep seabed mining regime until a new international regime governing U.S. miners enters into force. As the United States is not yet a party to the LOS Convention, the DSHMRA should be reauthorized since the Act continues to serve its original purposes. The level of funding for the DSHMRA reauthorization is, however, a separate matter upon which I offer no opinion.

Thank you, Mr. Chairman, for the opportunity to testify. I hope that this Subcommittee will decide to act in the best overall interests of the United States with respect to the Law of the Sea Convention.

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UNITED NATIONS CONFERENCE ON STRADDLING
FISH STOCKS AND HIGHLY MIGRATORY
FISH STOCKS
New York, 14-31 March 1994

REVISED NEGOTIATING TEXT

Prepared by the Chairman of the Conference

PREAMBLE

Recalling Agenda 21 adopted by the United Nations Conference on Environment and Development at Rio de Janeiro in June 1992, in particular Chapter 21, Programme Area C thereof, which calls upon States to commit themselves to the sustainable use of the living marine resources of the high seas;

Recalling also United Nations General Assembly resolution 47/192, by virtue of which a conference on straddling fish stocks and highly migratory fish stocks was convened, in accordance with the mandate established in the United Nations Conference on Environment and Development;

Seeking to address the problems identified in Agenda 21, Chapter C, namely that management of high seas fisheries is inadequate in many areas and that some resources are over-utilized; noting that there are problems of unregulated fishing, over-capitalization, excessive fleet size, vessel reflagging to escape controls, insufficiently selective gear, unreliable databases and lack of sufficient cooperation between States;

Further recognizing the need to strengthen fisheries conservation and management, in the context of sustainable development, to promote the maintenance of the quantity, quality, diversity and availability of fishing resources for present and future generations;

Mindful that the sustainability of straddling fish stocks and highly migratory fish stocks is dependent on the willingness of States, individually and in cooperation with each other, to adopt measures which assure the conservation and management of the stocks overall;

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Reaffirming their commitment to the effective implementation of the principles embodied in Parts V and VII of the 1982 United Nations Convention on the Law of the Sea;

Further recognizing the urgent need for all members of the international community, particularly those with fishing interests, to strengthen their cooperation in the conservation and management of living marine resources in accordance with the 1982 United Nations Convention on the Law of the Sea;

And recalling the adoption of the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas by the FAO Conference in November 1993;

States have agreed as follows:

I. OBJECTIVE

1. States 1/ have a duty to ensure the long-term sustainability of straddling fish stocks and highly migratory fish stocks. The biological unity of stocks which occur both in the high seas and in areas under national jurisdiction requires that measures taken on the high seas and those taken in areas under national jurisdiction be compatible in order to ensure conservation and management of the stocks overall. To this end coastal States and States fishing on the high seas have a duty to cooperate for the purpose of achieving compatible measures so as to effectively conserve and manage straddling fish stocks and highly migratory fish stocks.

II. APPLICATION

2. Except as provided for in parts B and C of section III, the provisions set out in this document shall apply to conservation and management on the high seas of straddling fish stocks and highly migratory fish stocks. In accordance with the 1982 United Nations Convention on the Law of the Sea ("the Convention"), the coastal State has responsibility for conservation and management of such stocks in areas under national jurisdiction.

III. GENERAL PRINCIPLES

A. The nature of conservation and management measures

3. Coastal States and States fishing on the high seas shall give effect to the duty to cooperate, in accordance with the Convention, by establishing conservation and management measures for straddling fish stocks and highly

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1/ For the purposes of these provisions, references to States should be interpreted as including the European Economic Community in matters within its competence. These provisions also apply to the fishing entities whose vessels fish on the high seas.

migratory fish stocks and shall commit themselves to responsible fishing. They shall:

(a) on the basis of the best scientific evidence available, ensure that conservation and management measures are directed at maintaining or restoring stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global;

(b) adopt conservation and management measures to promote optimum utilization and ensure long-term sustainability of the fish stock(s) concerned, which may include, inter alia:

(i) establishment of total allowable catches and quotas;

(ii) limits to fishing effort (e.g. number of vessels or fishing days);

(iii) limits on the size of fish;

(iv) gear and operational restrictions (e.g. minimum mesh sizes);

(v) area and seasonal closures;

(c) take into consideration the effects on species belonging to the same ecosystem or dependent on or associated with the target species, with a view to maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened;

(d) promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques in order to minimise pollution, waste, discards, catch by lost or abandoned gear, and catch of non-target species, in particular endangered species, taking into account the need for protecting biodiversity and for multi-species, ecosystems-oriented management;

(e) take measures to deal with over-harvest and over-capacity and to ensure a level of fishing effort commensurate with the sustainable utilization of fisheries resources;

(f) take into account the special requirements of developing States in relation to straddling fish stocks and highly migratory fish stocks as set out in section IX, particularly the need for assistance to developing countries, including financial, scientific and technological assistance and training, in order that they can fulfil their obligations with respect to conservation and management of such stocks;

(g) enhance the level of certainty in management decision-making by collecting and sharing timely, complete and accurate data, as set out in annex 1, from fishing activities, inter alia, on position, catch, by-catch and fishing effort as well as information from national, regional and international research programmes;

(h) conduct and promote scientific research in support of fishery conservation and management, including abundance surveys and biological studies on target and non-target species, as well as research on oceanographic, climatic and other environmental factors;

(i) continuously assess and review fishing activities which may have adverse effects on the conservation of straddling fish stocks and highly migratory fish stocks;

(j) promote the implementation of conservation and management measures through establishment of effective monitoring, control and surveillance;

(k) ensure that conservation measures do not discriminate in form or in fact against the fishermen of any State.

B. Precautionary approaches to fisheries management

4. In order to protect and preserve the marine environment and living marine resources, consistent with the Convention, the precautionary approach shall be applied widely by States and by subregional or regional fisheries management organizations or arrangements to fisheries conservation, management and exploitation in accordance with the following provisions:

(a) in order to improve conservation and management decision-making, States shall obtain and share the best scientific information available and develop new techniques for dealing with uncertainty. States shall take into account, inter alia, uncertainties, including with respect to the size and productivity of the stocks, management reference points, stock condition in relation to such reference points, levels and distributions of fishing mortality and the impact of fishing activities on associated and dependent species, as well as climatic, oceanic, environmental and socio-economic conditions;

(b) in managing fish stocks, States should consider the associated ecosystems. They should develop data collection and research programmes to assess the impact of fishing on non-target species and their environment, adopt plans as necessary to ensure the conservation of non-target species and consider the protection of habitats of special concern;

(c) the absence of adequate scientific information shall not be used as a reason for postponing or failing to take measures to protect target and non-target species and their environment;

(d) the precautionary approach shall, based on the best scientific evidence available, include all appropriate techniques and be aimed at setting stock-specific minimum standards for conservation and management. States shall be more cautious when information is poor. States should determine precautionary management reference points, taking into account the guidelines contained in annex 2 and the action to be taken if they are exceeded. When precautionary management reference points are approached, measures shall be taken to ensure that they will not be exceeded. If such reference points are

exceeded, recovery plans shall be implemented immediately to restore the stock(s) in accordance with pre-agreed courses of action;

(e) in cases where the status of stocks is of concern, strict conservation and management measures shall be applied and shall be subject to enhanced monitoring in order to review continuously the status of the stocks and the efficacy of the measures to facilitate revision of such measures in the light of new scientific evidence;

(f) in the case of new or exploratory fisheries, conservative measures including catch and/or effort limits shall be established as soon as possible in cooperation with those initiating the fishery and shall remain in force until there are sufficient data to allow assessment of the impact of the fishery on the long-term sustainability of stocks and associated ecosystems.

C. Compatibility

5. Without prejudice to the sovereign rights of coastal States for the purpose of exploring and exploiting, conserving and managing the living marine resources within areas under national jurisdiction as provided for in the Convention, and the right of all States for their nationals to engage in fishing on the high seas, exercised in accordance with the Convention:

(a) with respect to straddling fish stocks, the relevant coastal State(s) and States whose nationals fish for such stocks in the adjacent high seas area shall seek, either directly or through the appropriate mechanisms for cooperation provided for in section IV, to agree upon the measures necessary for the conservation of these stocks in the adjacent high seas areas;

(b) with respect to highly migratory fish stocks, the relevant coastal State(s) and other States whose nationals fish in the region for these stocks shall cooperate directly or through the appropriate mechanisms for cooperation provided for in section IV with a view to ensuring conservation and promoting the objective of optimum utilization of such stocks throughout the region, both within and beyond the exclusive economic zone.

6. Coastal States shall regularly notify States fishing on the high seas in the subregion or region, either directly or through the appropriate subregional or regional fisheries organization or arrangement, of the measures adopted by such coastal States for straddling fish stocks and highly migratory fish stocks in areas under national jurisdiction.

7. In determining the manner in which compatible conservation and management measures are to be achieved for straddling fish stocks and highly migratory fish stocks, and the nature and extent of those measures, States shall respect any measures and arrangements adopted by relevant coastal States in accordance with the Convention in areas under national jurisdiction and shall:

(a) take into account the biological characteristics of the stock(s), the relationship between the distribution of the stock(s) and the fisheries and the

geographical particularities of the region, including the extent to which stock(s) occur and are fished in areas under national jurisdiction;

(b) take into account the relative dependence of the coastal State(s) and States fishing on the high seas on the stock(s) concerned;

(c) ensure that the measures do not result in undue harmful impact on the living marine resources;

(d) ensure that the measures established in respect of the high seas are no less stringent than those established, in accordance with the Convention, in areas under national jurisdiction in respect of the same stock(s).

8. If, in spite of having made every effort to cooperate for the purposes specified in paragraph 1, States are unable to agree on compatible and coordinated conservation and management measures, they shall resolve their differences in accordance with the dispute settlement provisions set out in section VIII. In the meantime, until the dispute settlement process is ended, States shall continue to observe the provisions herein, and relevant minimum international standards and otherwise act in a manner consistent with the duties imposed on States under the Convention, and:

(a) where coordinated measures for conservation and management of the stock(s) have been adopted by the relevant coastal States; or

(b) where there is only one coastal State involved, and that coastal State has adopted measures for the conservation and management of the stock(s);

States fishing on the high seas shall observe conservation and management measures equivalent in effect to the measures applying in the area(s) under national jurisdiction. If measures have been agreed in respect of the high seas, in the absence of conservation and management measures as described in (a) or (b) above, the relevant coastal State(s) shall observe measures equivalent in effect to those agreed in respect of the same stock(s) in the high seas.

IV. INTERNATIONAL COOPERATION

A. Mechanisms for international cooperation

9. Coastal States and States fishing on the high seas shall, in accordance with the Convention, pursue cooperation in relation to straddling fish stocks and highly migratory fish stocks directly or through appropriate subregional or regional fisheries management organizations or arrangements, taking into account the specific characteristics of the subregion or region.

10. The purpose of such cooperation shall be to agree on conservation and management measures, as required by the Convention, with respect to particular fish stocks, to ensure the long-term sustainability of those stocks and to preserve the marine environment which supports them.

11. States shall enter into consultations in good faith and without delay, particularly where there is evidence that the stocks concerned may be under threat of over-exploitation or where a new fishery is being pursued for the stock(s). Consultations shall be initiated at the request of any interested State. Pending agreement States shall observe the provisions herein and shall act in good faith in a manner which does not constitute an abuse of rights and with due regard to the rights, interests and duties of other States.

12. Where no appropriate subregional or regional fisheries management organization or arrangement exists to establish conservation and management measures for particular straddling fish stocks or highly migratory fish stocks, States concerned shall enter into consultations with a view to entering into appropriate arrangements to ensure effective conservation and management of the stocks in question.

13. Where a subregional or regional fisheries management organization or arrangement has the competence to establish conservation and management measures for particular straddling fish stocks or highly migratory fish stocks, States fishing for the stocks on the high seas and relevant coastal States shall give effect to their duty to cooperate by participating in the work of the subregional or regional organization or arrangement, in accordance with the mandate and terms of participation of that organization or arrangement.

14. Subregional and regional fisheries management organizations and arrangements shall be open to participation, on a non-discriminatory basis, by all States with an interest in the stocks concerned.

15. Only those States that participate in the work of a subregional or regional fisheries management organization or arrangement, or that otherwise cooperate with the applicable conservation and management measures, should have access to the fishery to which those conservation and management measures apply.

16. In implementing the provisions of paragraphs 9 to 15 above, States shall give effect, at the subregional or regional level, to the provisions of the Convention and other international agreements consistent with the Convention concerning the conservation and management of straddling fish stocks and highly migratory fish stocks.

B. Regional fisheries management organizations or arrangements

17. In establishing subregional or regional fisheries management organizations or arrangements for the conservation and management of straddling fish stocks and highly migratory fish stocks, States shall agree, inter alia, on the following:

(a) the stock(s) to which the conservation and management measures shall apply, taking into account the biological characteristics of the stock(s) concerned and the nature of the fisheries involved;

(b) the area to be covered, taking into account the relevant provisions of the Convention and the characteristics of the region, including socio-economic, geographical and environmental factors;

(c) how the new organization or arrangement will relate to the role, objectives and operations of any existing fisheries organizations or arrangements;

(d) the mechanisms by which the organization or arrangement will obtain scientific advice and review the status of the stock(s) in question including, where appropriate, the establishment of a scientific advisory body.

18. In establishing a regional fisheries management organization or arrangement in respect of an enclosed or semi-enclosed sea, States shall comply with the provisions of article 123 of the Convention.

19. States shall cooperate to strengthen existing subregional and regional fisheries management organizations and arrangements in order to improve their effectiveness in establishing and implementing conservation and management measures for straddling fish stocks and highly migratory fish stocks.

20. Coastal States and States fishing on the high seas which participate in a subregional or regional fisheries management organization or arrangement shall agree on and comply with conservation and management measures to ensure sustainability of the stock(s) in question. To that end they shall:

(a) agree, as appropriate, on allocation of participatory rights such as allocations of allowable catch or levels of fishing effort;

(b) adopt and apply international minimum standards for the responsible conduct of fishing operations;

(c) establish a scientific body as appropriate;

(d) develop agreed standards for collection, reporting, verification and exchange of data and information on fisheries for the stock(s) in question;

(e) compile and disseminate accurate and complete statistical data, as described in annex 1, relating to catches of targeted stocks and non-targeted species (both fish and non-fish) and any other relevant information necessary to ensure that the best scientific evidence is available, while maintaining confidentiality where appropriate;

(f) promote, conduct, and disseminate the results of, scientific assessments of the stocks and relevant research including research on environmental and oceanographic factors;

(g) establish appropriate cooperative mechanisms for effective monitoring, control, surveillance and enforcement;

(h) undertake appropriate efforts, consistent with international law, to ensure that no vessels engage in any activity contrary to the objectives of the organization or arrangement;

(i) develop and use selective, environmentally safe and cost-effective fishing gear and techniques in order to minimize pollution, waste, discards and the catching of untargeted species, in particular endangered species, taking into account the need for protecting biodiversity;

(j) agree on the means by which the activities of the organization or arrangement will be financed, bearing in mind the relative benefits derived from the fishery and differing capacities of countries, especially the developing coastal States, to provide financial and other contributions;

(k) agree on measures to deter non-parties from undermining the effectiveness of conservation and management measures established by the organization or arrangement in a manner consistent with international law;

(l) agree on means by which the fishing interests of new entrants will be accommodated;

(m) agree on decision-making processes which facilitate timely and effective determination of conservation and management measures;

(n) provide procedures for timely, compulsory and binding settlement of disputes concerning conservation and management measures, consistent with the relevant provisions of the Convention. Procedures for settlement of disputes shall be applicable to all members of the organization or parties to the arrangement;

(o) consult, cooperate and coordinate, as appropriate, with other relevant fisheries organizations and arrangements;

(p) establish procedures for regular review of the effectiveness of the organization or arrangement.

21. New members of a subregional or regional fisheries management organization or new parties to an agreement or arrangement shall be entitled to accrue benefits in exchange for the obligations that they undertake. Any allocation of participatory rights to new participants or new parties shall take into account, inter alia:

(a) the status of the stock(s) in question and the existing levels of fishing effort in the fishery;

(b) the interests, fishing patterns and fishing practices of existing participants and their respective contributions to conservation and management of the stock(s);

(c) the needs of coastal fishing communities which are dependent mainly on fishing for the stock(s);

(d) the fishing patterns and practices of each new participant and their prior contribution, if any, to conservation and management of the stock(s), to the collection and provision of accurate data and to the conduct of scientific research on the stock(s);

(e) the special requirements of developing States from the region or subregion, particularly where they are culturally and/or economically dependent on marine resources.

22. In giving effect to their duty to cooperate by participating in the work of the subregional or regional fisheries management organization or arrangement, States shall:

(a) ensure that data collection and processing adequately meet scientific assessment requirements and support management objectives;

(b) compile and submit the catch, effort and other relevant data referred to in annex I within an agreed format and time-frame;

(c) develop and share new resource assessment methodologies, management models and other analytical techniques;

(d) cooperate in the conduct of scientific research, including assessment of stock(s);

(e) ensure the full cooperation of their relevant national agencies and industries in the agreed work of the subregional or regional fisheries management organization or arrangement.

23. Subregional and regional fisheries management organizations or arrangements shall be transparent in their decision-making and other activities. Representatives from other intergovernmental organizations and non-governmental organizations concerned with straddling fish stocks and highly migratory fish stocks shall be afforded the opportunity to participate in meetings of such bodies as observers or otherwise, as appropriate, in accordance with the terms and conditions for participation agreed upon by the regional organization concerned.

V. COMPLIANCE WITH AND ENFORCEMENT OF HIGH SEAS FISHERIES CONSERVATION AND MANAGEMENT MEASURES

A. Duties of the flag State

24. Conservation and management measures for straddling fish stocks and highly migratory fish stocks must be effectively applied. To this end, flag States whose vessels fish on the high seas for straddling fish stocks and highly migratory fish stocks shall take the necessary measures to ensure that vessels entitled to fly their flag comply with applicable conservation and management measures. Measures to be taken by the flag State in respect of vessels entitled to fly its flag shall include an effective combination of the following:

(a) monitoring, control and surveillance of such vessels, their fishing operations and related activities;

(b) control of such vessels on the high seas by means of fishing licences, authorizations or permits, in accordance with applicable procedures agreed on at a subregional, regional or global level, if any, including:

(i) national legislation to prohibit fishing, on the high seas and in areas under the national jurisdiction of other States, by vessels that are not duly licensed or authorized to fish, or fishing by such vessels otherwise than in accordance with the conditions of a licence, authorization or permit;

(ii) requirements that vessels fishing on the high seas must carry the licence, authorization or permit on board the vessel at all times and must produce such licence, authorization or permit on demand for inspection by a duly authorized person;

(iii) requirements that the terms, conditions and other information contained in a licence, authorization or permit are sufficient to fulfil any subregional, regional or global obligations of the flag State;

(iv) requirements that vessels fishing on the high seas refrain from activities which undermine the effectiveness of conservation and management measures;

(c) implementation of quotas and any other control measures adopted in accordance with subregional or regional arrangements;

(d) establishment of a national record of fishing vessels incorporating information on such vessels authorized to fish on the high seas and such measures as may be necessary to ensure that all such vessels are entered in that record;

(e) provision of information required to be entered into international records or regional registers, as agreed, of vessels fishing or authorized to fish on the high seas;

(f) requirements for marking of fishing vessels and fishing gear for identification in accordance with uniform and internationally recognizable vessel and gear marking systems such as the Food and Agriculture Organization of the United Nations (FAO) Standard Specifications for the Marking and Identification of Fishing Vessels;

(g) requirements for catch verification (target and non-target species) through agreed observer programmes, inspection schemes, unloading reports, supervision of transshipment and monitoring of landed catches and market statistics;

(h) requirements for regular reporting of position, catch and effort information;

(i) implementation of national and regionally agreed inspection schemes, including requirements for such vessels to permit access by inspectors from other States in the region or subregion. Detailed requirements for inspection schemes must include requirements for vessel operators to allow any duly authorized person(s) to board vessels and carry out the duties agreed under the scheme;

(j) implementation of national and regionally agreed observer programmes, including requirements for such vessels to permit access by observers from other States in the subregion or region. Detailed requirements for observer programmes must include requirements for vessel operators to allow observers to board vessels and carry out the functions agreed under the programme;

(k) development and implementation of vessel monitoring systems, including, as appropriate, satellite transmitter systems, in accordance with national and regionally agreed integrated systems;

(l) the regulation of transshipment on the high seas to ensure that applicable conservation and management measures, including those relating to monitoring, control and surveillance, are not undermined;

(m) measures to implement, for such vessels, subregional, regional or global standards for collection of catch (target and non-target species), effort and other relevant fisheries data in the agreed format and time-frame as set out in annex 1;

(n) requiring compliance with international minimum standards for responsible fishing practices;

(o) ensuring that fishing activities comply with subregionally or regionally agreed measures relating to minimizing non-target catches;

(p) disseminating information through appropriate programmes amongst all involved in fishing activities, concerning the content of, and basis for, applicable conservation and management measures.

25. The flag State shall effectively exercise its jurisdiction and control over vessels entitled to fly its flag and shall authorize such vessels to be used for fishing on the high seas only where it is able to exercise effectively its responsibilities in respect of such vessels under the Convention and the provisions of this document.

26. Where there is a regionally agreed system of monitoring, control and surveillance in effect, flag States shall ensure that the measures they impose are compatible with that system.

B. Compliance and enforcement by the flag State

27. The flag State shall ensure compliance by vessels entitled to fly its flag with applicable conservation and management measures and international minimum standards. To this end, the flag State shall:

(a) adopt legislation and administrative measures to ensure that vessels entitled to fly its flag comply with applicable conservation and management measures;

(b) provide for the effective enforcement of such measures irrespective of where violations occur;

(c) ensure that, where it has been established, in accordance with the laws of the flag State, that a vessel entitled to fly its flag has been involved in the commission of a serious breach of applicable conservation and management measures, that the vessel is prohibited from fishing on the high seas until such time as all outstanding criminal or civil judgments in respect of such vessel have been satisfied;

(d) investigate immediately and fully any alleged violation of applicable conservation and management measures, which may include the physical inspection of the vessel(s) concerned, and report promptly to the State alleging the violation and the relevant subregional, regional or international organization or arrangement on the progress and outcome of the investigation. Investigations may be undertaken directly, in cooperation with other interested State(s), or through the relevant subregional or regional fisheries conservation and management organization or arrangement. Information on the progress and outcome of the investigations should be provided to all States having an interest in or affected by the alleged violation;

(e) require any vessel entitled to fly its flag to give information to the investigating authority regarding catches, activities and fishing operations in the area of an alleged violation, where there are grounds for believing that the vessel has committed such a violation;

(f) if satisfied that sufficient evidence is available to enable proceedings to be brought in respect of an alleged violation, institute proceedings without delay in accordance with the laws of the flag State and, where appropriate, detain the vessel.

28. A flag State conducting an investigation of an alleged violation may request the assistance of any other State whose cooperation may assist in clarifying the circumstances of the case, including identifying fishing vessels reported to have engaged in activities undermining applicable conservation and management measures. All States shall endeavour to meet reasonable requests of the flag State in connection with such investigations. A flag State should utilize evidentiary material made available to it by other States or organizations.

29. All States shall take measures for their nationals to ensure that they comply with applicable conservation and management measures and other international minimum standards. Such measures shall permit cancellation or suspension of authorizations to serve as vessel masters or fishing masters.

30. Sanctions applicable in respect of violations shall be of sufficient gravity as to be effective in securing compliance and to act as a deterrent, and to deprive offenders of the benefits accruing from their illegal activities.

C. Regional agreements and arrangements for compliance and enforcement

31. The flag State, in addition to fulfilling its duties in respect of vessels entitled to fly its flag, shall cooperate directly with relevant coastal States and through subregional or regional fisheries management organizations or arrangements in the development of regionally agreed procedures for the conduct of fisheries monitoring, control, surveillance and law enforcement. Where appropriate, fisheries monitoring and surveillance shall be conducted in accordance with such regionally agreed procedures. Within subregions or regions, States shall cooperate in the enforcement of their respective fisheries laws and regulations having regard to any specific agreements for that purpose. To this end, States shall agree, inter alia, on procedures under which the appropriate authorities of one State may board, inspect and, if appropriate, arrest a fishing vessel entitled to fly the flag of another State, including the notification requirements for such action and the procedures under which one State might detain the vessel of another State. All investigations and judicial proceedings shall be carried out expeditiously.

32. States may take cooperative action, in accordance with international law, to prevent vessels which have violated applicable conservation and management measures, rules or standards, from fishing in a particular region or regions until such time as appropriate enforcement action is taken by the flag State. Those actions may include, inter alia, the provisional cancellation of the offending vessel's authorization to fish in respect of the particular region concerned.

33. Where there are reasonable grounds for suspecting that a fishing vessel on the high seas is apparently without nationality, a State may take such action as is necessary to board and inspect the vessel. Where evidence so warrants, the State may institute proceedings in accordance with the general rules of international law.

34. When a fishing vessel conceals its identity or indicates a registry to which it does not belong, and there are reasonable grounds for suspecting that such vessel has undermined applicable conservation and management measures, States may, in accordance with regionally agreed arrangements, board and inspect the vessel. When the flag State has been identified, the inspecting State shall, as soon as possible, inform the flag State and request the latter to take control of the vessel for enforcement purposes. Until that time, the inspecting State may detain the vessel for such reasonable period as is necessary for the flag State to take control of the vessel for enforcement purposes. The inspecting State may, with the agreement of the flag State, take other appropriate action.

35. States shall give due publicity to the measures taken by subregional or regional agreements or arrangements concerning conservation and management of straddling fish stocks and highly migratory fish stocks.

VI. PORT STATES

36. A port State shall take, in accordance with international law, such measures as are necessary to promote the effectiveness of applicable conservation and management measures. When taking such measures a Port State shall not discriminate against the vessels of any State.

37. A port State may, inter alia, inspect documents and catch on board fishing vessels, when such vessels are voluntarily in its ports and offshore terminals and, except in cases of force majeure or distress, may deny access to these facilities. A port State may also carry out such inspections at the request of a flag State in order to assist the flag State in enforcement of its laws relating to conservation and management of straddling fish stocks and highly migratory fish stocks. The port State shall inform the flag State whenever such inspection discloses reasonable grounds for believing that the vessel has contravened or otherwise undermined conservation and management measures or has fished on the high seas without a licence, authorization or permit.

38. The port State may detain a vessel for such reasonable period as is necessary for the flag State to take control of the vessel or otherwise take responsibility for enforcement purposes. If the port State detains a vessel for this purpose it must promptly inform the flag State.

39. States may enact legislation empowering the relevant national authorities to prohibit landings where the catch has been taken in a manner that undermines the effectiveness of applicable conservation and management measures.

VII. NON-PARTICIPANTS IN SUBREGIONAL OR REGIONAL ORGANIZATIONS OR ARRANGEMENTS

40. Where a State does not participate in the work carried out through a subregional or regional fisheries management organization or arrangement, that State is not discharged from the obligation to cooperate in the conservation and management of the regulated stock(s).

41. A State which does not cooperate with a relevant subregional or regional fisheries management organization or arrangement shall not authorize vessels entitled to fly its flag to operate in fisheries which are subject to conservation and management measures established by that organization or arrangement. Vessels flying the flag of a State not cooperating with the relevant subregional or regional fisheries management organization or arrangement shall not fish contrary to the conservation and management measures established by that organization or arrangement.

42. States which are members of, or participate in, subregional or regional fisheries management organization or arrangement shall exchange information with respect to the activities of fishing vessels which fly the flags of States which are neither members of nor participate in the organization or arrangement and which are operating in the fishery for the relevant stock(s).

43. States shall cooperate in a manner consistent with international law to the end that fishing vessels entitled to fly the flags of States which are neither members of nor participate in the organization or arrangement and which are operating in the fishery for the relevant stock(s) do not engage in activities that undermine the effectiveness of applicable conservation and management measures. To this end States which are members of or participate in the work of a subregional or regional fisheries management organization or arrangement shall take measures, individually or collectively, which they deem necessary and appropriate to deter such activities.

VIII. DISPUTE SETTLEMENT

44. All States shall cooperate in order to prevent disputes. States have the obligation to settle their disputes by negotiation or other peaceful means.

45. States may use any of the procedures for dispute settlement contained in the Convention, including compulsory recourse to binding dispute settlement. Where all parties to a dispute are also parties to the Convention, the provisions for the settlement of disputes under Part XV of the Convention shall apply unless the parties agree otherwise.

46. Subregional or regional fisheries management organizations or arrangements shall adopt procedures for compulsory and binding settlement of disputes, consistent with the Convention, to ensure the expeditious resolution of disputes relating to the conservation and management of straddling fish stocks and highly migratory fish stocks. States which are participants in such subregional or regional fisheries organizations or arrangements shall comply with the agreed procedures unless such participants agree to use the provisions for the settlement of disputes contained in the Convention, or agree otherwise.

47. States that are not participants in a subregional or regional fisheries management organization or arrangement may invoke or submit to the dispute settlement procedure established by the organization or arrangement. States which are participants in such organizations or arrangements shall submit to such procedure when it is invoked by non-participants on matters which fall within the competence of the organization or arrangement, unless the parties to the dispute agree otherwise.

48. In the event that the parties to a dispute, whether or not they are participants in a subregional or regional fisheries organization or arrangement, are unable to agree on the same procedure to be applied within 30 days of receipt of notification that a dispute exists between them, the arbitration procedures set out in annex 3 shall apply.

49. Where the issue in dispute has technical aspects, States concerned may refer the matter to an ad hoc expert panel established by the parties to the dispute. The panel may assist and advise the States concerned to enable them to resolve the matter speedily without recourse to formal dispute settlement procedures.

50. The dispute settlement provisions herein shall not apply to disputes with coastal States relating to the sovereign rights of coastal States with respect to the living resources in their exclusive economic zones or the exercise of those rights and they do not affect in any way the provisions of Article 297 of the Convention.

IX. SPECIAL REQUIREMENTS OF DEVELOPING STATES

51. In exercising their rights and fulfilling their responsibilities with regard to conservation and management of straddling fish stocks and highly migratory fish stocks on the high seas, States shall give full recognition to the special requirements of developing States. In this regard, States shall, through the appropriate mechanisms for cooperation provided for in section IV of this document and, as appropriate, through FAO, cooperate to provide assistance to developing States.

52. In giving effect to the duty to cooperate in the establishment of conservation and management measures for straddling fish stocks and highly migratory fish stocks, States shall take into account the special requirements of developing States, in particular:

(a) the vulnerability of developing States which are dependent on the exploitation of living marine resources for the nutritional requirements of their populations or parts thereof;

(b) the need to avoid adverse impact on subsistence and small-scale commercial fisheries in developing States, particularly small island developing States, which are culturally and economically dependent upon the exploitation of living marine resources;

(c) the need for specific assistance, including financial, scientific and technological assistance and training, in order that developing States can fulfil their obligations with respect to conservation and management of straddling fish stocks and highly migratory fish stocks;

(d) the need to ensure that the measures do not result in transferring, directly or indirectly, a disproportionate burden of conservation action onto developing States, especially the least-developed amongst them.

53. Specific forms of cooperation with developing States for the purposes set out in the present section shall include financial assistance, assistance relating to human resources development, technical assistance, transfer of technology, including joint venture arrangements, and appropriate advisory and consultative services. Assistance should be directed in the following areas:

(a) collection, reporting, verification and exchange of fisheries and fisheries-related data and information;

(b) stock assessment and scientific research, including study of the interaction between subsistence, small-scale and artisanal fisheries;

(c) monitoring, control, surveillance, compliance and enforcement, including training and capacity-building at the local level, the development and funding of national and regional observer programmes and access to technology and equipment;

(d) access to dispute settlement mechanisms within regional and subregional organizations or arrangements;

(e) greater participation of developing States in fisheries for straddling fish stocks and highly migratory fish stocks.

54. States shall cooperate to enhance the ability of developing States to conserve, manage and develop their own national fisheries for straddling fish stocks and highly migratory fish stocks in the exclusive economic zone and on the high seas. Such cooperation shall take the form of special assistance to developing States, including allowing for favourable access for developing States located in a particular subregion or region to high seas areas adjacent to their exclusive economic zones to enable them to participate in high seas fisheries for straddling fish stocks and highly migratory fish stocks.

55. States shall cooperate to establish a voluntary fund to assist developing States and in particular to enable developing States to meet the costs involved in any dispute settlement proceedings to which they may be parties.

56. States and international and regional organizations should assist developing States in establishing new fisheries organizations or arrangements or strengthening existing organizations or arrangements concerned with the conservation and management of straddling fish stocks and highly migratory fish stocks.

X. REVIEW OF THE IMPLEMENTATION OF CONSERVATION AND MANAGEMENT MEASURES

57. States, subregional and regional organizations, and arrangements concerned with the conservation and management of straddling fish stocks and highly migratory fish stocks shall implement the foregoing based on their capacities and the needs of the region. They shall report biennially to the Secretary-General of the United Nations who shall submit a report biennially to the General Assembly on the progress made in the implementation of the provisions of this document, taking into account information provided by States, the FAO and its fisheries bodies, other relevant intergovernmental bodies and relevant non-governmental organizations. The Secretary-General shall also report as required to the Commission on Sustainable Development.

58. A full review of the implementation of the provisions herein shall be undertaken by a conference to be held five years from the date of adoption of this text. The conference shall review and assess the adequacy of the provisions herein and, if necessary, propose means of strengthening the substance and methods of implementation of the provisions and measures in order to address any continuing problems in fisheries for these stocks.

Annex 1

MINIMUM STANDARD FOR DATA REQUIREMENTS FOR THE CONSERVATION AND MANAGEMENT OF STRADDLING FISH STOCKS AND HIGHLY MIGRATORY FISH STOCKS

1. The timely collection, compilation, analysis and evaluation of data are fundamental for effective fishery conservation and management. Effective conservation and management of straddling fish stocks and highly migratory fish stocks require the availability of relevant fisheries data from the entire stock. To this end, the data from fisheries on the high seas and those in areas under national jurisdiction should be compiled in a way which enables statistically meaningful analysis. These data include catch and fishing effort statistics and other fishery-related information, such as vessel-related and other data for standardizing fishing effort. Data collected in support of conservation and management of target stocks shall also include information on associated and dependent species, whether they are fish or non-fish species. Data collected shall be verified to ensure accuracy, while maintaining the confidentiality of non-aggregated data to ensure cooperation by industry.

2. Consideration should be given to enhancing training and providing financial and technical assistance to developing States with regard to building capacity in the field of conservation and management of living marine resources. The fullest possible involvement of developing country scientists and managers in fisheries conservation and management should be promoted. Assistance should focus on enhancing capacity to implement data collection and verification, observer programmes, data analysis and research projects supporting stock assessments.

Principles of data collection

3. The following general principles should be considered in defining the parameters for collection, compilation, and exchange of data from high seas fishing operations for straddling fish stocks and highly migratory fish stocks:

(a) A State is obliged to collect adequate data from vessels entitled to fly its flag;

(b) data should be collected on fishing operations according to the operational characteristics of each fishery (e.g. individual trawl tow, long-line set, school fished for pole-and-line and purse-seine, day fished for troll) and in sufficient detail to enable effective analysis;

(c) fishery data should be verified through an appropriate system;

(d) States shall compile fishery-related and other supporting scientific data in an internationally agreed format and provide them in a timely manner to the relevant subregional or regional fisheries organization or arrangement. The subregional or regional fisheries organization or arrangement should request non-participants to provide data relating to their fishing in the region;

/...

(e) scientists of the flag State and from the relevant subregional or regional fisheries organization or arrangement should analyse these data separately or jointly, as appropriate;

(f) the subregional or regional fisheries organization or arrangement shall compile data and make them available in a timely manner in an agreed format to all interested States under the terms and conditions established by the organization or arrangement.

Basic fishery data requirements

4. The following types of data should be collected in sufficient detail to facilitate effective stock assessment:

(a) time series of historical catch and effort statistics by fleet;

(b) total catch in number and/or nominal weight (defined by FAO as: (landings + losses due to dressing, handling and processing - gains prior to landings) x conversion factors] by species (both target and non-target, including non-fish species) as is appropriate to each fishery;

(c) discard statistics, including estimates where necessary, reported as number and/or nominal weight by species;

(d) effort statistics appropriate to each fishing method;

(e) fishing location, date and time fished, and other statistics on fishing methods as appropriate.

Scientific data supporting stock assessment

5. In addition to collection, compilation and exchange of fishery data, States are obliged to exchange scientific data, which should include:

(a) length, weight and sex composition of the catch, where agreed;

(b) information supporting stock assessments and stock identification;

(c) other relevant research, including surveys of abundance, biomass surveys, hydro-acoustic surveys, research on environmental factors affecting stock abundance, and oceanographic and ecological data.

Vessel data and information

6. The following vessel-related data are required for standardizing fleet composition and vessel fishing power and for converting between different measures of effort in the analysis of catch and effort data:

(a) vessel identification, flag and port of registry;

(b) vessel type;

(c) vessel specifications (e.g. material of construction, date built, registered length, gross registered tonnage, power of main engine(s), hold capacity, catch storage methods);

(d) fishing gear description (e.g. type, amount and gear specifications).

7. The following information need not be provided if available through other means:

(a) navigation and position fixing aids;

(b) communication equipment and international radio call sign;

(c) crew size.

Data reporting

8. The following data on high seas fishing operations should be sent at frequent intervals to the national fisheries administrations of the flag State:

(a) catch and effort log book data, including data on fishing operations;

(b) catch and effort reports by radio, telex, facsimile and/or satellite transmission.

Data verification

9. States or, as appropriate, subregional or regional fisheries organizations or arrangements, should establish mechanisms for verifying fishery data. Such mechanisms should include:

(a) position verification through vessel monitoring systems;

(b) scientific observer programmes to monitor catch, effort, catch composition (target and non-target) and other details of fishing operations;

(c) vessel trip, landing and transshipment reports;

(d) port sampling.

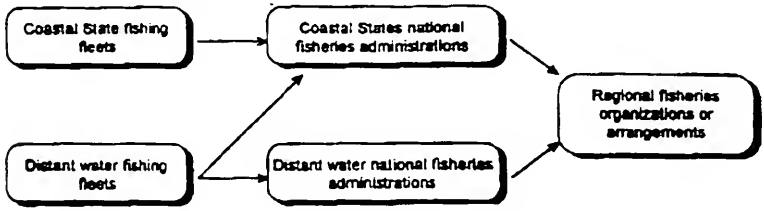
Data exchange

10. Data collected by flag States must be shared with other flag States and relevant coastal States through appropriate subregional or regional fisheries organizations or arrangements. Subregional or regional fisheries organizations or arrangements shall endeavour to compile data from the stocks as a whole and make data available to all interested parties. Subregional or regional fisheries organizations and arrangements should, to the extent feasible, develop database management systems which provide access to data electronically.

11. Within the framework of subregional or regional fisheries organizations or arrangements member States should agree on the specification of data and the format in which they are to be provided, in accordance with the provisions of this annex and taking into account the nature of the stocks and the fisheries for those stocks in the region.

12. The following models of data exchange outline mechanisms currently in effect:

Data flow arrangements within EEZs



Data flow arrangements for high seas fishing operations

/...

At the global level, collection and dissemination of global data should be effected through the Food and Agriculture Organization of the United Nations (FAO). Where a subregional or regional fisheries organization or arrangement does not exist, FAO may also do the same at a regional level by arrangement with the States concerned.

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Annex 2

SUGGESTED GUIDELINES FOR APPLYING PRECAUTIONARY REFERENCE POINTS IN MANAGING STRADDLING FISH STOCKS AND HIGHLY MIGRATORY FISH STOCKS

1. Management strategies should seek to maintain or restore populations of harvested stocks at levels consistent with previously agreed precautionary reference points. These strategies should include measures which can be adjusted rapidly as reference points are approached.

2. Conservation and management objectives should be stock specific and take account of the characteristics of fisheries exploiting the stock.

3. Distinct reference points are used to monitor progress against conservation and management objectives. Reference points should incorporate all relevant sources of uncertainty. When information for determining reference points for a fishery is poor or absent, provisional reference points should be set. In such situations, the fishery should be subject to enhanced monitoring so as to revise reference points in light of improved information as soon as possible.

4. Reference points related to conservation objectives should be chosen to warn against over-exploitation. Management strategies using such reference points should ensure that the risk of exceeding them is low. In this context maximum sustainable yield should be viewed as a minimum international standard. Conservation-related reference points should ensure that fishing mortality does not exceed, and stock biomass is maintained above, the level needed to produce the maximum sustainable yield. For already depleted stocks, the biomass which can produce maximum sustainable yield can serve as an initial rebuilding target.

5. Management-related reference points provide an indicator as to when and how quickly maximum allowable levels of stock removals are being approached. Management action should ensure that such reference points, on average, are not exceeded.

Annex 3

ARBITRATION

Institution of proceedings

1. Any party to a dispute may submit the dispute to arbitration by written notification addressed to the Secretary-General of the United Nations, who shall notify the other party or parties to the dispute and constitute an arbitral tribunal as set out herein. The notification shall be accompanied by a statement of the claim and the grounds on which it is based.

Constitution of arbitral tribunal

2. The arbitral tribunal shall, unless the parties to the dispute agree otherwise, be constituted as follows:

(a) subject to subparagraph (f), the arbitral tribunal shall consist of five members;

(b) the party instituting the proceedings shall appoint one member, who may be its national. The appointment shall be included in the notification referred to in paragraph 1 of this annex;

(c) the other party to the dispute shall, within 20 days of receipt of the notification, appoint one member, who may be its national. If the appointment is not made within this period, the appointment shall be made by the Secretary-General within a further 20 days;

(d) the other three members shall be appointed by agreement between the parties, and shall be nationals of third States unless the parties agree otherwise. The parties to the dispute shall appoint the President of the arbitral tribunal from among those three members. If, within 20 days of receipt of the notification referred to in paragraph 1 of this annex, the parties are unable to reach agreement on the appointment of one or more members of the tribunal to be appointed by agreement, or on the appointment of the President, the remaining appointment or appointments shall be made in accordance with subparagraph (e), at the request of a party to the dispute. Such request shall be made within 10 days of the expiration of the aforementioned 20-day period;

(e) unless the parties agree that any appointment under subparagraphs (c) and (d) be made by a person or a third State chosen by the parties to the dispute, the Secretary-General shall make the necessary appointments. The members so appointed shall be of different nationalities and may not be in the service of, ordinarily resident in the territory of, or nationals of, any of the parties to the dispute;

(f) any vacancy shall be filled in the manner described for the initial appointment;

(g) parties to the dispute in the same interest shall appoint one member of the tribunal jointly by agreement. Where there are several parties to the dispute having separate interests, or where there is disagreement as to whether they are of the same interest, the Secretary-General shall appoint one member of the tribunal after consultation with the parties;

(h) in disputes involving more than two parties, the provisions of subparagraphs (a) to (f) shall apply mutatis mutandis.

Submission of memoranda

3. Within 20 days of the constitution of the tribunal, the parties to the dispute shall file a memorandum with the tribunal, copies of which shall be transmitted to all parties.

Procedure

4. Unless the parties to the dispute otherwise agree, the arbitral tribunal shall determine its own procedures, assuring to each party full opportunity to be heard and to present its case.

Hearings

5. A hearing shall be convened at a place and on a date to be determined by the tribunal within 40 days following the constitution of the tribunal.

Duties of parties to a dispute

6. The parties to the dispute shall facilitate the work of the arbitral tribunal and, in particular, in accordance with their law and using all means at their disposal, shall:

(a) provide it with all relevant documents, facilities and information; and

(b) enable it when necessary to call witnesses or experts and receive their evidence and to visit the localities to which the case relates.

Expenses

7. Unless the arbitral tribunal decides otherwise because of the particular circumstances of the case, the expenses of the tribunal, including the remuneration of its members, shall be borne by the parties to the dispute in equal shares.

Required majority for decision

8. Any decision of the arbitral tribunal shall be taken by a majority of its members. In the event of an equality of votes, the President shall have the casting vote.

Default of appearance

9. If one of the parties to a dispute does not appear before the arbitral tribunal or fails to defend its case, the other party may request the tribunal to continue the proceedings and make its award. Absence of a party or failure of a party to defend its case shall not constitute a bar to the proceedings. Before making its award, the arbitral tribunal must satisfy itself, not only that it has jurisdiction over the dispute, but also that the claim is well founded in fact and in law.

Provisional measures

10. The tribunal may prescribe provisional measures which it considers appropriate under the circumstances to preserve the respective rights of the parties or to prevent damage to the stock(s) in question, pending the final decision.

Award

11. The award of the arbitral tribunal shall be confined to the subject-matter of the dispute and state the reasons on which it is based. It shall contain the names of the members who have participated and the date of the award. Any member of the tribunal may attach a separate or dissenting opinion to the award. The tribunal shall communicate its decision to all parties within 30 days of the end of the hearing. Reasons in writing shall be communicated to the parties within 60 days of the decision.

Finality of award

12. The award shall be final and without appeal, unless the parties to the dispute have agreed in advance to an appellate procedure. It shall be complied with by the parties to the dispute.

Interpretation or implementation of the award

13. Any controversy which may arise between the parties to the dispute as regards the interpretation or manner of implementation of the award may be submitted by either party for decision to the arbitral tribunal which made the award. For this purpose, any vacancy in the tribunal shall be filled in the manner provided for in the original appointments of the members of the tribunal.

Application to entities

14. The provisions of the present annex shall apply, mutatis mutandis, to any dispute involving any entities.

WRITTEN TESTIMONY OF
DR. CRAIG R. SMITH
ASSOCIATE PROFESSOR, DEPARTMENT OF OCEANOGRAPHY
UNIVERSITY OF HAWAII AT MANOA
HONOLULU, HAWAII

FOR THE
SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

SUBMITTED FOR THE HEARING REGARDING *THE U.N. LAW OF THE SEA TREATY* AND REAUTHORIZATION OF THE *DEEP SEABED HARD MINERAL RESOURCES ACT* (DSHMRA), SCHEDULED FOR

April 26, 1994

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to discuss the status of our scientific understanding of the environmental impacts of deep seabed mining, and to identify research needed for sound management of seabed mining. Due to unalterable scheduling conflicts, I have designated my colleague Dr. Fred C. Dobbs of Old Dominion University to present an abbreviated version of this testimony at the hearing, and to answer any questions you may have. I hope that this does not create any inconveniences.

My testimony will address four general topics: (1) current understanding of deep-sea ecology and potential mining impacts; (2) information being generated by current environmental impact studies; (3) additional knowledge required to manage seabed mining impacts; and (4) specific recommendations concerning DSHMRA reauthorization.

CURRENT UNDERSTANDING OF DEEP-SEA ECOLOGY AND MINING IMPACTS

Our knowledge of deep seabed ecosystems is very limited, yet we know the ecology of the deep-sea floor is remarkable in several ways. Deep seabed communities are generally characterized by small, sediment-dwelling animals that attain very high levels of

biodiversity; these systems may account for a substantial number of the total species on earth. Current rough estimates suggest that a subset of the fauna in deep-sea ecosystems (the "macrofauna," which includes macroscopic worms, crustaceans, etc.) may harbor a total of between 500,000 and 10,000,000 species, yielding a wealth of species rivaling that of some of the richest terrestrial ecosystems. This diversity of seabed life is concentrated in the top centimeter (1/2 inch) of seafloor sediments, exploiting the extremely limited flux of food materials sinking from the sunlit waters of the surface ocean, kilometers overhead. Most macroscopic deep-sea animals are "surface deposit feeders" that eat the dilute organic materials that settle onto the surface of the seafloor. Thus, while deep-sea communities are species rich, they are biomass poor, a typical square meter (or yard) of ocean mud may contain 500 animals belonging to 100 different species constituting but a few grams (less than 0.1 ounce) of total living tissue.

In addition to harboring high biodiversity, it is clear that most deep-sea ecosystems are fragile. Physical disturbances are rare in these environments because bottom currents are generally sluggish and sedimentation-rates extremely slow; the diminutive residents of these ecosystems are thus heavily disturbed by even modest modifications of their environment. Once disturbed, limited experimental studies in the deep ocean suggest that even small patches (e.g., 30 cm or 1 foot in diameter) may take many years to recover; in fact no deep-ocean researcher has documented complete community recovery from any experimental disturbance, even after years of study. Seabed community recovery from severe large-scale disturbances covering tens to hundreds of square kilometers (such as might occur from mining) seems likely to require decades.

Current ecological thinking suggests that seabed mining of manganese nodules, regardless of technology, will impact seabed communities in at least three ways. First, nodule removal will deplete the seafloor of hard nodule surfaces that are colonized by a

specialized nodule community. Second, as nodules are lifted from the seafloor, surficial seafloor sediments will be sucked away and/or plowed under to depths of at least 5 cm (2 inches), disrupting the sediment habitat and killing nearly all animals in the path of the nodule collector. The third set of mining impacts will result from the resuspension, and subsequent redeposition, of sediments due to activities unavoidably associated with nodule collection and cleaning. The impacts of sediment redeposition are the most difficult to predict, but very likely to be the most far ranging, potentially impacting seafloor communities kilometers away from the nearest mining vehicle.

To predict (and manage) the environmental effects of nodule mining, we desperately require ecological information of least three types. (i) We need to know the "dose-response" functions of seabed organisms to the sediment redeposition that will be caused by mining. Dose-response functions are necessary to predict disturbance effects resulting from varying thicknesses of redeposition, and thus the areal extent of impact from particular mining events. It is important to note that dose-response functions from single ("acute") deposition events may be much less deleterious than "chronic" doses of similar total deposition thickness, because chronic doses will repeatedly dilute the sparse food sources of surface deposit feeders. Once the dose-response functions of acute and chronic deposition are elaborated, the disturbance impacts associated with various mining patterns can begin to be predicted.

(ii) We need to know the recovery times of seabed communities following mining disturbance. Such information is essential to predict how long a mining tract should be left "fallow" to allow surrounding impacted areas to return to undisturbed conditions. Recovery times for seabed communities will vary with the local severity and spatial extent of the initial mining disturbance.

(iii) We need to know the geographic ranges of representative species likely to be negatively affected by mining. Without this information we cannot predict how large an area can be disturbed by mining before substantial species extinctions begin to occur.

Our current knowledge of dose responses, recovery times and species ranges for communities in the seabed mining claims is terribly limited. We cannot constrain damaging redeposition doses, or community recovery times, to within a factor of ten; i.e., we cannot say whether one or 10 millimeters of redeposition is the threshold dose for major community mortality, or whether mining-like disturbances will require 15 or 150 years for community recovery. In addition, the latitudinal and longitudinal ranges of even a representative subset of deep-sea species remain unevaluated. One thing is clear, however. The area of maximum commercial interest for nodule mining represents a distinct biogeochemical province on the ocean floor (as evinced by the presence of commercial-grade nodules); it is likely to encompass the total ranges of numerous seafloor species keyed to subtle variations in the deep-sea environment. Thus, it is quite conceivable that exploitation of substantial proportions of existing mining claims on time scales of decades will yield extinction of large numbers (100's to 1000's) of seafloor species. Without dramatically more information on species ranges and tolerance to mining disturbance, and the time scales of recovery from mining disturbance, species extinctions on a grand scale cannot be ruled out.

INFORMATION GENERATED BY CURRENT ENVIRONMENTAL IMPACT STUDIES

Ongoing studies of the environmental impacts of manganese mining include the Benthic Impact Experiment II (BIE-II) being conducted by the Ocean Minerals and Energy Division (OMED) of NOAA, and the DISCOL experiment conducted by scientists from Germany. Both experiments involve small-scale simulations of seabed

mining, in which about 1 square kilometer of seabed was perturbed by a simulated nodule collector for a period of 2-3 wk. These experiments are being conducted in widely separated seafloor areas, and should provide insights into general disturbance effects and community recovery patterns for deep-sea communities following a very limited mining event. Because experiment manipulations in the deep-sea are so difficult, and because the BIE-II experiment will yield some important semi-quantitative information concerning the nature of seabed community response to resedimentation, from a scientific perspective the BIE-II experiment should not be abandoned. However, the BIE-II experiment (and the DISCOL experiment) will provide limited predictive information concerning the effects of seabed mining for the following reasons.

Neither the BIE-II nor DISCOL experiments appear able to accurately quantify the thickness of sediment redeposition associated with their small-scale simulations of mining. Lack of quantitative dose-response functions will make it extremely difficult to extrapolate the results of these kilometer-scale, few-week long experiments to future mining events, which will likely encompass tens to hundreds of square kilometers and time scales of months to years. In addition, the community components studied in the BIE-II experiment are very limited, making ecological interpretation of experimental results very difficult. The difficulties with these (albeit valuable) experiments highlights the need for precise determination of resedimentation doses (in both space and time), and monitoring of a broad array of ecosystem components, in any future studies of mining impacts.

ADDITIONAL KNOWLEDGE REQUIRED TO MANAGE SEABED MINING IMPACTS

Additional knowledge required for managing mining impacts falls into four topical areas: (i) the dose-response functions of seabed organisms to acute and chronic redeposition; (ii) time scales of seabed-community recovery following disturbance of

varying intensities and spatial scales; (iii) geographical ranges of deep-sea species from a variety of ecological groups (e.g., sessile nodule dwellers, slightly mobile sediment dwellers, small walking crustaceans, etc.); (iv) patterns of natural temporal variability in seabed communities from the prospective mining areas. Rationales for research to increase knowledge in areas (i) - (iii) are outlined above; the rationale for topic (iv) is as follows.

Deep-sea communities are traditionally perceived as essentially unchanging, varying little in composition over months to years. However, there is increasing evidence that changes in the upper ocean can alter rates of food flux to the deep seabed on seasonal time scales (e g , due to spring blooms of microscopic algae), as well as on interannual time scales (for example, due to El Nino events). Recent data sets suggest that the seafloor abundance of macroscopic animals may vary substantially from year to year in the prospective mining areas, possibly in response to annual variations in the flux of sinking food. In order to distinguish mining effects (due either to simulated or actual mining) from patterns of natural community variability, it will be necessary to elucidate the patterns of temporal variability in seafloor communities at unperturbed sites.

Acquiring the desired knowledge in the above four topical areas will require significant scientific research. The time scale over which this research should occur is dictated, in part, by the apparent recovery times of deep-sea communities: i.e., decades. Considering that mining may become economically feasible within 10-20 years, the appropriate environmental impact studies must be initiated now, if we are to predictively manage mining impacts. The fact that Germany, Japan, China and Russia appear to be initiating their own limited mining-impact studies highlights the timeliness of this research.

RECOMMENDATIONS CONCERNING DSHMRA REAUTHORIZATION

From a scientific research perspective, it would be highly desirable to reauthorize the DSHMRA, with funding included to address the research topics identified above Because much of the scientific information required for predicting mining impacts is applied (i e., its timeliness is dictated by management concerns rather than by broad scientific principles), this information would be most expediently acquired by a focused scientific program addressing well defined goals (e.g., within OMED) In my opinion, such a research program will require stability in research directions and funding levels over a period of at least ten years if significant progress is to be made in understanding the ecological processes outlined above Such stability is required if slowly developing deep-sea experiments are to come to fruition, and to preclude compromising long-term scientific goals to deal with short-term bureaucratic contingencies (e g., "You have one year to produce conclusive results or we close you down!").

Past experience also dictates the need for a scientific steering committee to directly oversee mining-impact research conducted by OMED (or a similar office) Such a committee should have substantial control over the program's research directions and research proposals funded. A useful model for this type of program organization is the US JGOFS program of the National Science Foundation. To avoid conflicts of interest, the scientific steering committee should be composed of academic scientists not funded by NOAA to conduct nodule-mining research. In the past, scientific advice concerning mining impact studies has frequently been solicited by OMED (or its precursors) via workshops, but much of the advice has not been followed. I believe this partly accounts for the limited advances made in the past decade in our understanding of the environmental impacts of deep seabed mining.

CONCLUSIONS

It is clear that seabed mining of manganese nodules could have a major deleterious impact on vast areas of ecologically fragile deep-ocean floor. The high biodiversity in these ecosystems raises the possibility that poorly regulated mining efforts could yield species extinctions on a massive scale. Unfortunately, our current understanding of seabed ecology severely limits our ability to make ecologically sound management decisions concerning mining. Ongoing impact studies, while valuable, will not fill the large voids in our scientific knowledge. From an ecological perspective, there is a clear need for a well-organized, long-term scientific research program designed to predict the environmental impacts of seabed mining. Such a program could be initiated in a timely manner in the process of reauthorization of the DSHMRA.

AMERICAN
MINING
CONGRESS
FOUNDED 1897

1920 N Street NW, Suite 300
Washington, DC 20036-1662
202/861-2800
Fax: 202/861-7535

John A. Knebel
President

STATEMENT OF

BRIAN J. HOYLE,
COUNSEL TO THE UNITED STATES OCEAN MINING LICENSEES,

AND REPRESENTING
THE AMERICAN MINING CONGRESS,

ON

REAUTHORIZATION OF THE DEEP SEABED HARD MINERAL RESOURCES
ACT OF 1980

BEFORE THE

THE SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO
AND THE OUTER CONTINENTAL SHELF
COMMITTEE ON MERCHANT MARINE AND FISHERIES
UNITED STATES HOUSE OF REPRESENTATIVES

APRIL 26, 1994

Mr. Chairman, Members of the Subcommittee on Oceanography, it gives me great pleasure to appear before you today to present the testimony of the three consortia licensed under the Deep Seabed Hard Mineral Resources Act of 1980. I am Brian Hoyle. I serve as counsel to the three United States licensees on government policy and law of the sea matters The licensees are Ocean Management Inc. (OMI), Ocean Minerals Company (OMCO), and Ocean Mining Associates (OMA) These three consortia have each put in over twenty-five years on ocean mining development and collectively have spent over half a billion dollars There was a fourth licensee, but a year ago at this time, the Kennecott Group decided to abandon its license because of the continued legal and political uncertainty of Part XI facing ocean mining The Kennecott Group was concerned primarily about the uncertainty resulting from the UN Law of the Sea process. The three licensees testifying before you today find themselves faced not only with great uncertainty from the UN process, but a new uncertainty, disinterest or possibly even hostility toward the ocean mining program on the part of the National Oceanic and Atmospheric Administration.

Thus, for the ocean mining industry this is a very important hearing. Congress's decision on reauthorization of the Deep Seabed Hard Minerals Resources Act will profoundly affect the future of investment in the development of deep ocean mineral resources by American citizens Failure by Congress to reauthorize the Act could only be

seen by present and potential investors as a decision by the United States to abandon ocean mining

Reauthorization of the Deep Seabed Hard Mineral Resources Act is needed to remove significant uncertainty that now exists in the minds of investors about the United States commitment to establish a sound and stable regime for the development of the mineral resources of the deep ocean This uncertainty arises from two primary sources. First, over the past two years, the National Oceanic and Atmospheric Administration (NOAA) has consistently tried to divert funds appropriated by Congress for the domestic ocean mining program to other programs and has attempted to shut down the program Second, the Administration is declaring victory in its effort to "reform" Part XI of the United Nations Convention on the Law of the Sea, which governs ocean mineral development. From an investor's viewpoint, the changes that the UN group appears to have adopted do not cure the fundamental defects facing a private investor in ocean mining. The Administration champions "provisional application" of the Law of the Sea Convention This procedure would enmesh the United States in the Convention regime several years before the Administration presents the Convention to Congress for advice and consent and implementing legislation

The Deep Seabed Hard Mineral Resources Act is a key tool in reducing these uncertainties. The Act provides the best available tool for Congressional oversight over NOAA's stewardship of the ocean mining program The Merchant Marine and Fisheries Committee has over the years been vital in ensuring that NOAA implements its responsibilities under the Act in a diligent and responsible manner For most of the fourteen years since the Act was enacted in 1980, NOAA and the industry have enjoyed an excellent working relationship. Unfortunately, the era of tight budgets has imposed burdens on NOAA's funding that have encouraged NOAA to take measures contrary to what industry believes to be in the best interests of this country. Senior officials at NOAA have been quick to try to divert the resources of the program to other activities while at the same time contemptuously disregarding the administrative procedures required by law or at least circumventing them We repeatedly find ocean mining funding used for "overhead" and other NOAA activities with no relation to the ocean mining program

NOAA's behavior over the past two years demonstrates that Congressional oversight is vital to the implementation of a successful United States ocean mining program. Only in the face of strong reaction by members of this and the other body has NOAA retreated and performed its duties within the letter and spirit of the Act. About six weeks ago, Under Secretary Baker stated before the Merchant Marine and Fisheries Committee that ocean mining does not fit into the strategic objectives of the agency. As investors we find ourselves at the mercy of a regulator that does not appear to want us. In our view, our best protection is diligent Congressional oversight of NOAA's implementation of its responsibilities under the Act.

This spring NOAA has once again sought to divert money from the ocean mining program. This time NOAA has taken money from the ongoing international environmental research project on the effects of deep ocean mining and transferred it to other NOAA activities. The 1994 cruise and activities were already scheduled. Commitments had been made to other governments participating in the project. The Benthic Impact Environmental program (BIE) is now in its third year of what should be at a minimum a five year program to evaluate certain deep ocean effects of ocean mining activities. This is important environmental information that must be collected before ocean mining can proceed into the commercial development stage. I respectfully request that the supplementary Statement of Mr. Richard J. Greenwald in support of this environmental research project be included in the record. Industry, environmentalists, and governments concur that the information that will be obtained by the current project will have to be developed before commercial recovery permits can be issued.

Without an environmental framework possessing sufficient scientific data, the ocean mining industry will face costly delays when it is ready to begin commercial recovery. Lack of fundamental environmental information has directly and indirectly caused obstacles to land-based mining. The United States has a unique opportunity to avoid such obstacles to ocean mining if the environmental research is done now. If the project were killed for lack of funding now, the project would have to be repeated from the beginning in the future. In industry's view, it does not make economic sense to terminate a project that everyone concurs is needed.

Some in NOAA argue that since commercial recovery is some years down the road, the technology that will be used will be so radically different that NOAA cannot adequately evaluate the environmental effects now In industry's view this is simply not true One might draw an analogy with the automobile The basic technology of the Model T and the Mustang GT are fundamentally the same. Both have internal combustion engines, four wheels, a steering and braking mechanism The real difference is that over time, power and carrying capacity of cars has increased substantially through refinement of the basic technology Industry has developed ocean mining technology that it is satisfied will recover ocean minerals at a commercial rate This technology will be refined and improved over time, but its fundamental design is unlikely to change. Therefore, we consider the technical arguments that NOAA has advanced for terminating the environmental research program to be specious

No one is more conscious of the need for economy and prudent use of funds than the mining industry The industry has gone through a decade of tight budgets and economizing caused by a prolonged period at the bottom of the market cycle. At the same time, we are also cognizant of the fact that some attempts to economize will in the long run raise, not lower, costs and cause greater, not less, expenditure. Therefore, we urge Congress to support continuation of the BIE by reauthorizing the program at its present levels. In order to prevent NOAA from diverting the funds, Congress may also wish to consider a specific appropriation for the ocean mining program. It may save significant amounts of Members' time and effort in the future in oversight

The greatest single threat to American interests in ocean mining remains the United Nations Convention on the Law of the Sea of 1982. The proposed "Agreement on Implementation" of the United Nations Convention on the Law of the Sea makes significant progress in changing some of the most egregious provision of the 1982 Convention. These changes are laudable and important and should not be taken lightly. Nevertheless, the bottom line remains the same the seabed mining regime of the United Nations Convention on the Law of the Sea continues to be prohibitive to private investment The ocean mining licensees recommended to the Secretaries of State, Defense, Commerce, and Treasury in 1992 that if the United States sought to fix Part XI

to make it attractive to ocean mining investment, Part XI needed radical and complete overhaul A Band-Aid and suture approach would not do What the UN process has produced is less than a Band-Aid and suture approach It does not even purport to amend the Convention. It establishes controlling "interpretive provisions" that will control in the event of a dispute. This is not an approach that gives confidence to prospective investors in ocean mining. The licensees' specific concerns about the results of the UN process are set out in their paper of March 15, 1994, attached as an addendum to this statement. We respectfully request that it be made a part of the record.

From an investor's standpoint the biggest problem with the Convention as it would be implemented by the "Agreement on Implementation" is that it perpetuates the centrally-planned economy model with that system's hostility to private investment. The Convention continues to provide for creation of the Enterprise, the "state mining company" of the International Seabed Authority, which will be the UN organization set up to administer resource development on 60% of the Earth's surface Each applicant for mining rights must still give half of its mine site to the Seabed Authority to be developed by the Enterprise An applicant must still provide costly training and services to the Enterprise. As far as technology transfer is concerned, we find that no one, including the United States Patent Office can understand what the obligations will be under the Convention

The organization of the system is frightening to investors The International Seabed Authority will be based on a classic United Nations pattern. The current inability of the United Nations to perform its traditional peacekeeping role effectively does not give us great confidence that a new United Nations type organization is a prudent model for management and regulation of ocean mining

The failure of the Convention to provide due process for natural and corporate persons is a major disincentive to investment In the United States, much of our mineral law has been shaped by Congress and the courts over the past one-hundred years Disputes between the Department of the Interior and miners have often required administrative and judicial remedies Congressional oversight plays a strong role in ensuring that the Administration does not abuse its discretion In the Law of the Sea

Convention, private persons have no right to bring action before the Law of the Sea Tribunal The Convention would prohibit even the United States government from challenging a discretionary act of the Seabed Authority In land-based mining, discretionary acts of regulatory and enforcement agencies are the main source of contention between governments and mineral investors Congress crafts legislation very carefully to limit discretion to prevent abuse and provides remedies for abuse of discretion The Law of the Sea Convention provides no such protections

This lack of due process is enough in and of itself to deprive any investor of assured access and security of tenure To any investor, assured access and security of tenure are the vital ingredients that must be present This means not only the ability of a qualified applicant to obtain mining rights, but the ability of the holder of the mining rights to exercise those rights over time without unreasonable interference by the host government. The ability of the International Seabed Authority to nullify the investment by interfering with operations remains a major threat to prospective investors.

A key objective of the United States in the Law of the Sea over the past thirty years has been to protect our national access to seabed mineral resources. The United States now has those rights under international law No one can take them away unless the United States voluntarily relinquishes them From the prospective of the mining industry, signature by the United States of the "Agreement on Implementation" will be such voluntary relinquishment. The economic system of the United States is based on private enterprise. Mining in the United States takes place through private investors, who invest because the legal and economic system create an environment that allows investors to respond to market forces and earn profits. The Law of the Sea Convention, even as changed by the Protocol, does not Therefore, unless the United States government intends to engage directly in ocean mining as an investor and operator, the United States would lack assured access to seabed minerals under the "Agreement "

The most curious and potentially most threatening aspect of the UN Law of the Sea process is provisional application We are told that the Administration intends to sign or in some other way commit the United States to the "Agreement Relating to the Implementation of Part XI of the 1982 United Nations Convention on the Law of the Sea"

this summer. The Administration does not intend to submit the "Agreement" and the 1982 Convention for advice and consent for some years, possibly not until mid-1998. In the meantime, the United States as a signatory of the "Agreement" may become a "Provisional Member" of the Council, the executive organ of the Seabed Authority. We are told by the Administration that United States domestic seabed mining law will continue to control until the United States becomes a full Contracting Party to the United Nations Convention on the Law of the Sea by ratification. At the same time, the Convention appears to favor those countries which apply to the Seabed Authority for mining rights in the interim.

The whole procedure and substance of the "Agreement" appears to have been drafted to be deliberately mysterious. It is a method that as far as we can find is unprecedented in international law to amend a political or legal treaty. We have grave difficulty understanding what status it would have in international law, which countries would be bound by it, how it will be applied in practice, what Congress's role in the process is, what industry's role in the process is, what United States rights and duties are under the "Agreement," how that affects our licenses and the NOAA program. The Administration has conducted the negotiations with very little inter-agency participation in the negotiations and no industry participation. This appears contrary to the public participation policies of the last four administrations. Anything Congress can do to clarify where this Administration is taking this Nation in regard to Law of the Sea would be deeply appreciated.

If the Administration ever gives Congress the chance to evaluate the so-called "reformed" regime under the Law of the Sea Convention, the licensees respectfully request that Congress consider the following. The licensees now operate under United States domestic law enacted by Congress after ten years of thorough consideration. This statute establishes protection for ocean mining investment internationally through an arrangement called the "reciprocating states" regime. With the "reciprocating states" regime, this law and similar laws patterned after it in other countries provide a sound basis for investment. The efficiency and minimalist system of regulation of the current ocean

mining regime form a sound approach against which any "reformed" Law of the Sea Convention regime must be compared

It would be a tragedy if the United States allowed the great potential of the seabed to be locked up and denied to the American people and the world by participation in a Law of the Sea Convention that effectively prohibits investment The resources that we now plan to develop in the future are likely to be only the tip of the iceberg. The seabed can be justly be compared to Alaska of the last century when it was labeled "Seward's Folly." Most Americans scoffed when Secretary Seward bought Alaska because they believed there was nothing worth having there. In this century, Alaska has proven to be a mineral treasure house

Refinement of existing technology will enable American licensees to explore and develop the ocean floor economically Alone among the world's ocean mining ventures, the American licensees have successfully tested commercial designs for miners at sea. No industry or government outside the United States has accomplished this.

The metal that will provide the principal income stream from production of manganese nodules is nickel. Over the past decade or so, the nickel market has been weak because supply has simply exceeded demand The nickel market is once again beginning to grow. Much new growth in the future may result from demand for high quality, alloy steels in new technologies Over half of all nickel consumption continues to be in stainless steel. It is interesting to note that several new environmental technologies may become major consumers of stainless steel and others may require nickel in batteries and other "green" equipment Since the United States produces very little nickel, large additional imports would be necessary if, for example, nickel hydride batteries for electric cars were required or became attractive to the consumer. If the political and legal problems facing ocean mining are resolved satisfactorily, the seabed will be developed when the markets for the metals justify investment The tragedy would be if the seabed were shut in by a prohibitive seabed mining regime contained in the UN Law of the Sea Convention and the so-called "Agreement "

It is clear that many uncertainties that will continue to face the United States ocean mining program and licensees until the United States makes a final decision whether to

ratify the Convention Even if the United States ultimately ratifies the Convention, it will be several additional years before the transition into the Convention regime is completed. Meanwhile, the licensees need the ocean mining program established by the Deep Seabed Hard Mineral Resources Act for the orderly progress of their programs. We need to be assured that the United States continues to have an interest in ocean mining and will insist upon the creation of a sound and stable ocean mining regime The most logical approach would be a five year reauthorization This would provide needed continuity and enable the matter to be considered again in 1999 after the decision on ratification is made. To permit the orderly continuation of the environmental research program, we respectfully request that the program be reauthorized at level funding of $1 5 million.

Thank you very much

The Views of the United States Ocean Mining Licensees on Trends in the Negotiations to make the United Nations Convention on the Law of the Sea of 1982 Universally Acceptable

March 15, 1994

SUMMARY

Congress and the Administration have requested the views of the United States ocean mining licensees on current efforts to "reform" the United Nations Convention on the Law of the Sea of 1982. The Law of the Sea (LOS) Convention has received the requisite 60 ratifications and will enter into force on November 16, 1994. None of these ratifications is by a major industrialized country. No country in which a private or government business entity with an ocean mining program is located has ratified the Convention. All countries with an interest in seabed mining insist that Part XI of the Convention must be significantly changed if a workable seabed mining regime is to be established. The seabed mining industry worldwide has stated that the regime set out in Part XI is prohibitive to private or government investment. When this paper was prepared, industry had just received a revision of the negotiating text, commonly called the ""Draft Agreement"," dated 14 February 1994, taking into account the latest round of negotiations. The "Agreement" text does nothing to change industry's assessment that the trend in the negotiations will fail to produce a regime that can attract private investment in ocean mining.

The licensees now operate under United States domestic law, which establishes protection for ocean mining investment internationally through an arrangement called the "reciprocating states" regime. The domestic statute in the United States is the Deep Seabed Hard Mineral Resources Act of 1980. With the "reciprocating states" regime, this law and similar laws patterned after it in other countries provide a sound basis for investment. The efficiency and minimalist system of regulation of the current ocean mining regime form a sound approach against which any "reformed" Law of the Sea Convention regime must be compared.

From an investor's standpoint, the "Draft Agreement on Matters Relating to Implementation of United Nations Convention on the Law of the Sea's" proposed "fixes" to the problems of the Convention are far too limited in scope. While the fixes attack a number of important problems, they leave the fundamental ideology, shape and policies of Part XI intact. The Convention, even if the provisions of the "Draft Agreement" were controlling, would:

- fail to provide assured access to qualified applicants because of ambiguities;

- create a privileged class of investor for pioneers and discourage new entrants;

- impose up-front training obligations on United States licensees;
- create the risk that unreasonable fees may be imposed upon private investors;
- establish the International Seabed Authority, a novel, untested international organization possessing very broad discretionary powers. The Seabed Authority will be the first international organization with control and regulatory powers over a resource and with taxing powers over private persons. It will be partially controlled by countries whose interest is to make seabed mining impossible;
- establish an unnecessarily large and unwieldy bureaucracy, which is not subject to checks and balances;
- rely on decision making mechanisms that will promote gridlock;
- fail to provide investors with judicial and administrative due process;
- maintain the ideologically bankrupt concepts and policies of the so-called New International Economic Order;
- encourage discrimination in favor of developing countries, which presumably includes joint ventures among and with developing countries;
- provide for the creation of an "in-house" competitor, the "Enterprise," which would be the mining company operating arm of the Seabed Authority;
- impose political and economic burdens on industry to assist in the establishment of competitors through the so-called "banking system" under which a miner must give half of its mine site to the Seabed Authority to be given to the Enterprise and developing countries,
- provide advantages such as technology transfer to the Enterprise and developing country competitors, which could give them cost advantages over private investors; and
- commit the United States to participation in the implementation of the Convention regime and possibly major changes in the United States seabed mining law and program some years before the United States has decided to ratify or reject the Convention

It must be emphasized that this list is meant to be illustrative, not exhaustive, nor does the list attempt to rank the issues in order of importance. These are major

features that will convince boards of directors and other senior corporate decision makers that the political/legal risk of seabed mining is totally unacceptable.

Except in those cases in which the "Draft Agreement" expressly supersedes the provisions of Part XI of the 1982 Convention, Part XI continues to govern ocean mining as provided in the 1982 text. Industry's detailed views on Part XI are set out in the 1980 American Mining Congress analysis of what was then the Draft Convention, which was adopted with only minor changes as the United Nations Convention on the Law of the Sea in April 1982. The reader should keep in mind that the 1980 AMC text was meant to be a list of surgery needed to each provision in the Draft Convention to make it minimally acceptable to investors as a basis for investment, not to create an ideal regime. Because of the overwhelming number of fixes that would be required, the licensees recommended in 1992 that the United States seek complete overhaul of Part XI. This approach was rejected by United States negotiators and by the UN process. The result is that the Secretary General's process is hurrying to adopt an approach that is at best ambiguous in form and substance. **It is the view of the United States licensees that, if the present course is maintained, there will be no private investment in ocean mining exploration or production under the Convention.**

PERSPECTIVE OF THE UNITED STATES OCEAN MINING LICENSEES ON OCEAN MINING INVESTMENT

The "Ocean Mining Industry" Is Part Of The Mining Industry.

There are currently three United States ocean mining licensees. A year ago there were four. Because the licensees have not yet entered into the commercial recovery phase, some in Washington have challenged the existence of the ocean mining industry. Some suggest that the industry has died. This is the wrong way of looking at the matter. There never was and never will be an "ocean mining industry." There is a mining industry, a part of which intends to develop mineral resources of the deep seabed. Metals produced from the seabed will be fungible, that is, interchangeable, with metals produced on land. The resources of the deep seabed must be seen as a reserve to be developed commercially when the cost of doing so is competitive with or more economically and environmentally advantageous than land based mining and not before then.

Mining Investors Employ Risk Analysis In Evaluating Investment Opportunities.

In evaluating the United Nations Convention on the Law of the Sea, government and industry take very different approaches. Because this is not well understood, dialogue between the two is fraught with the danger of miscommunication. Government tends to assess the Convention from the standpoint of principles, precedents, value of written rules, policy goals, and strategic objectives. Industry, on the other hand, while not immune to issues of principle, is primarily concerned with how the Convention would affect the

investment. Issues of primary concern to industry are assured access, security of tenure, and stability of economic conditions controlled by regulations and procedures. In deciding whether to proceed into commercial recovery, miners use a technique called risk analysis The primary kinds of risk evaluated in the decision to invest in commercial recovery are:

- **technology risk;**
- **market risk; and**
- **political/legal risk.**

The decision to enter commercial recovery will not be made until the risk analysis demonstrates the potential for a return on investment competitive with or better than alternative corporate investment opportunities available to the parent companies of the consortia.

Technology risk arises from the question of whether the technology developed to mine and process a mineral resource will indeed work.

The United States licensees are satisfied that the at-sea and on-shore engineering systems they have developed will do the job. Mining is basically a materials movement exercise. The technology of how to remove ocean minerals from the sea floor and get them to the surface is proven. Refinements in that technology will no doubt be developed in the future, but the basic approach and systems have been developed and tested. One might draw an analogy between a 1909 Ford Model T and a 1994 Ford Mustang. Both have four wheels, an internal combustion engine, a drive shaft, and a steering wheel. The concepts remain the same. The significant difference is that evolutionary improvements in the basic system enable the new car to go faster and carry more.

Market risk arises from the question of whether the market will buy the metals produced by the venture at a price that will enable the venture to achieve its financial goals.

If the venture is to be successful in the marketplace, the market price of the metals must exceed the cost of production of the metals to a degree that will return the investment and yield a profit commensurate with the level of technical, market, and political/legal risks Since the metals produced from the seabed are fungible with metals produced on land, the market price of metals from the seabed is determined by the price that consumers are willing to pay for all metals Until the relationship between cost of production and selling price justifies the development of new sources of metals, no new mines will be brought on stream, whether on land or at sea

Over the past decade, the world has suffered, from the perspective of the mining industry, from a glut of metals, a large percentage of which have been sold at prices below production costs by government mining enterprises Production has exceeded the ability

of the market to absorb all the metals produced Even low cost producers are not producing at capacity Seabed mining is, at best, anticipated to be a middle cost producer Therefore, at the present time, no room exists in the market for the new mines contemplated for the oceans

Political/legal risk arises from the danger that the law and policies of the host country (or in the case of the LOS Convention, an international organization) will interfere with the successful completion of the project.

Mining projects are generally anticipated to twenty or thirty years, that is, long enough to enable a venture to recover its capital costs and earn a profit stream. The perception that the governing body has the capability, regardless of current intent, to interfere capriciously with successful completion of the project as planned will discourage investment. That is why the United States has such a strong system of laws and judicial review with built in checks and balances.

What is necessary to create a satisfactory legal/political environment? In order to provide a basis for prudent investment the legal/political regime of the host government must be stable and predictable with clear and reasonable laws, rules, regulations, terms, conditions and restrictions. Miners and bankers routinely evaluate the administrative, legislative, and judicial organs for reasonableness, stability, predictability and accountability

The trend in the current UN negotiations suggests that the resulting Convention will fail to establish a satisfactory legal/political environment for investment. Indeed, since the negotiations began, one United States licensee has already abandoned its license. At the time of abandonment of its license in May 1993, the Kennecott Consortium stated that the lack of any foreseeable satisfactory resolution of the legal regime because of the continuing conflict over Law of the Sea seabed regime was the main cause of the decision to abandon. The remaining three licensees see no prospect for private seabed mining investment if the United States and other seabed mining countries adopt a regime based on the current approach.

THE UNITED STATES LICENSEES ARE NOT ENCOURAGED BY CURRENT TRENDS IN THE LAW OF THE SEA NEGOTIATIONS

Part XI Must Be Entirely Replaced.

In the view of the United States ocean mining licensees, only radical surgery or an entirely new approach to Part XI could establish in the Convention a regime and machinery that could attract private investment in ocean mining. As the United States licensees stated to the Secretaries of State, Defense, Commerce, and Treasury in 1992, nothing less than a complete and thorough renegotiation of Part XI could produce

legal/political conditions under which an investor could commit funds prudently, without fear of being accused of wasting corporate assets. Unfortunately, the process under the auspices of the Secretary General of the United Nations has by its terms of reference rejected a thorough renegotiation of Part XI.

In writing to the four Secretaries in 1992, the four licensees stated:

"We feel that the United States Government needs very much to:

(a) clarify its position on where it stands on the contents and form of acceptable major changes to Part XI and whether it wants to become a participant in the Secretary General's consultations or remain an observer,

(b) reject ambiguous "fixes" or general principles that merely substitute uncertainty for unacceptable provisions of Part XI;

(c) state unambiguously in advance of any multilateral decisions to re-negotiate Part XI the minimum acceptable changes necessary to remove the obstacles to ocean mining contained in Part XI;

(d) establish effective procedures for industry input to the deliberations, and

(e) clarify and recognize that there are many issues beyond those on the Secretary General's agenda that must be resolved satisfactorily for the regime to attract private investment. We would call your attention to the letter of December 5, 1980, from the American Mining Congress to Ambassador George Aldrich with an extensive critique of the Draft Law of the Sea Convention. In addition, several very important problems arise for private industry from the work of the Preparatory Commission relating to access to exploration. These must be resolved or any "fixed" Law of the Sea Convention would put the American licensees' programs in peril."

Current Trends Indicate The UN Negotiations Will Produce Another Regime Prohibitive To Private Investment.

Industry has grave concerns about the direction of the current negotiations. The United States has never articulated its objectives with regard to the specific provisions of Part XI that must be changed to make the 1982 Convention acceptable to the United States. Likewise, as the Secretary General's process has evolved, the Administration has failed to clarify its views on what procedure to change the Convention is necessary to satisfy the United States. The participants in the Secretary General's process have made a conscious effort to avoid the normal methods of amending a treaty. How the substantive

provisions of the "Draft Agreement" would relate to and affect the 1982 Convention is a deliberate mystery. From an investor's standpoint, while the "Draft Agreement" would make some beneficial changes to very important problems in the Convention, it would, more importantly, leave some of the greatest obstacles to investment unchanged.

The "Draft Agreement" would resolve many of the "government issues," that is, the issues of concern primarily to governments, relating to control, governance, and precedent. These include financing of the Seabed Authority and decision-making in that organization, and production controls and government assistance, and amendment of the regime, but it leaves untouched the fundamental problem for the prospective investor, that is: the Convention seabed mining regime continues to be a system of government ownership and political control over economic activity at a time when the world is turning away from centrally managed economics toward privatization and market oriented policies. Thus, the Convention regime remains the victim of "old think," which by its very nature would put privately financed seabed mining at a disadvantage in competition with both its regulator and land based mining.

The UN process now intends to adopt a "protocol on provisional application" of the United Nations Convention on the Law of the Sea. We are told that the Secretary General's group intends to complete negotiations this summer in order to bring into force the protocol, or whatever this document is, before entry into force of the Convention in November. The procedure by which this protocol will enter into force and its status as a legal instrument amending the Convention remain uncertain. These uncertainties are significant disincentives to investment.

We are told that the procedure of amending the Convention will be a form of "tacit consent." The tacit amendment approach is used often for the fairly non-controversial technical standards set out in technical annexes of treaties, such as the Convention on Prevention of Pollution of the Sea by Ships, but, to our knowledge, this procedure has never been used for highly contentious political and contractual provisions of a major political convention. We wonder what will be the relationship between the protocol and the 1982 Convention when it enters into force this November in its 1982 form as ratified by sixty countries. Which will control? The Protocol purports to control the interpretation of the Convention, but does not amend it. Is there precedent for such an approach for a major political treaty? How has this approach worked in the past?

THE BOAT PAPER APPROACH FAILS TO CURE MANY FUNDAMENTAL PROBLEMS IN PART XI AND CREATES A FEW NEW OBSTACLES TO PRIVATE INVESTMENT.

From the standpoint of the private investor, the Boat/Paper in combination with the 1982 Convention fails to create a regime that can attract private investment in ocean mining. Even if the approach worked exactly as its proponents argue it will, the Convention would.

- **fail to provide assured access to qualified privately financed applicants because of ambiguities;**

The "Draft Agreement" attempts to provide greater specificity to the access system through decision-making in the Council and the Technical Commission. This is an improvement over Part XI alone, but fails to take into account that assured access is determined by the totality of the requirements and hurdles that an investor must go through to obtain and maintain mining rights

- **create a privileged class of investor for pioneers and discourage new entrants;**

The "Draft Agreement" like the 1982 Convention, Resolution II, creates a privileged class for pioneer explorers. This goes beyond grandfather rights and would discriminate against new entrants,

- **permit the Seabed Authority to impose unreasonable financial obligations on private investors;**

The fees that could be imposed on seabed mining investors are arbitrary and bear no real relation to the requirements of the Authority or due diligence. They may be imposed up-front and in addition to the high costs resulting from the banking, compulsory exploration, and mandatory training systems. The Convention provides for a $250,000 application fee on an application for exploration rights by a pioneer explorer. This bears no relation to the cost of processing an application fee. NOAA's experience under the domestic United States program demonstrates that this fee is excessive and redundant in light of the evaluations and other work already accomplished by NOAA with previously paid, much smaller, United States license fees. In addition, the Convention in Annex II provides for a $1,000,000 annual fee to be paid by pioneer explorers. The "Draft Agreement" postpones the fee during the exploration phase, but permits the Authority to demand $1,000,000 per annum for the exploration period when the miner enters into commercial production. The financial terms of contracts could result in double taxation on miners by the Seabed Authority and by the miner's sponsoring government

- **impose training obligations on pioneer explorers at an unreasonable stage in their projects.**

These training obligations are being met by Japan, France, and Russia through government training programs for training personnel from developing countries in marine sciences. How would American industry be expected to deal with these obligations? We have no indication that the United States government is willing to assume these obligations. A pioneer explorer will only be entering the learning curve in its own operations. To expect it to bear the cost and time of providing training in a program during start-up is unreasonable

- **establish the International Seabed Authority, an untried international organization with very broad discretionary powers, the first with regulatory powers over a resource and taxing power over private persons, which will be partially controlled by States whose interest is to make seabed mining impossible;**

The International Seabed Authority would be the first international organization with regulatory and taxing powers over private investors and their operations. Through its regulatory powers, it will have broad discretion to interfere with and even shut down the mining operations of investors The Council, the executive organ of the Seabed Authority, will have members whose interests are hostile to seabed mining. At the same time, no due process exists to provide a means for a miner to directly bring a judicial or administrative action to challenge a discretionary act of the Seabed Authority

- **provide for decision making mechanisms that will promote gridlock;**

The approach sought by the United States and other industrialized countries relies heavily on the ability of governments to protect their interests by blocking action in the Council This may be adequate for governments, but to a private investor facing operating and regulatory uncertainties during a pioneer period, the risk of gridlock when decisions are needed from the Council constitutes a risk that, without opportunity for a hearing, the Seabed Authority may be shut down or delay its operation for a period during which its revenue will be impaired

- **provide for the creation of the "Enterprise," which would be the State mining company operating arm of the Seabed Authority;**

The Enterprise is to be the mining company of the Seabed Authority It is a relic from the time when developing countries were enamored of the notion of State ownership of the means of production. An opportunity existed in the summer of 1992 for the industrialized countries to get rid of the Enterprise by making its removal from the Convention a key issue They did not Negotiators now say it is politically impossible to remove the Enterprise from the Convention. Accordingly, the industrialized countries negotiated a provision that the Enterprise will only be brought into operation by affirmative vote of the Council Experience cautions that while in theory the United States could block the Enterprise from start up, such will be politically impossible. Even if the United States blocked start-up of the Enterprise, this would invite retaliation against United States mining operators. The provisions relating to the Enterprise have been mitigated somewhat by making it subject to the same regulatory and financial burdens as the private operator, but its advantages inherent in the "banking system," mandatory training obligations, and technology transfer continue to provide it with significant cost advantages

- **maintain the political and economic burdens on industry to assist in the establishment of competitors through the so-called "banking system" under which a miner must give a mine site equal to its own or half of its mine site to the Seabed Authority to be mined by the Enterprise or developing countries;**

The 1982 Convention imposes several burdens cited above on private investors to subsidize and assist in the establishment and operations of their primary competitor, the Enterprise. As noted, the "Draft Agreement" goes some distance to put the private investor and the Enterprise on an equal footing, but private applicants are still required to give for the cost-free use of the Enterprise a fully explored site equal in value to the applicant's mine site. The miner must offer two fully explored sites. The Authority may choose either one at its discretion for the benefit of the Enterprise or developing countries. The "Draft Agreement" appears to try to mitigate the long term effect of this, but its approach may force the private operator into a joint venture if it wishes to develop the other site it has explored.

- **perpetuate the ideologically bankrupt concepts and policies of the so-called New International Economic Order;**

The policies that the Authority is to implement, set out in Article 150 and elsewhere in Part XI, articulate the bankrupt, anti-private enterprise principles of the New International Economic Order. They are based on the model of a centrally planned economy and lay the foundation for (1) discrimination in favor of developing countries and (2) protection of land-based producer interests. By itself, this might not be a serious problem, but in combination with the broad discretion given the Authority in the Convention, it increases the risk that the Authority would act to impair the miner's investment.

- **deprive investors of judicial and administrative due process;**

Due process, both administrative and judicial, are vital to any investor in mineral development. The miner needs to be able to protect its investment against arbitrary decisions of the regulator. One need only look at United States regulatory practice to see the importance of administrative and judicial remedies to the investor. Regulators by their nature and in diligent pursuance of their mandates tend to lean toward the side of heavy regulation. Most United States regulatory law has developed through judicial decision. In civil law countries, national systems of administrative courts exist to resolve disputes between citizens and the national government. Nothing similar exists in the Law of the Sea Convention. The dispute settlement provisions of the Convention are modeled after those customary in international law, which governs the relations between nations. The Law of the Sea Convention presents a situation novel in international law, under which a private investor would be regulated directly by an international organization. At the same time, the miner would have no direct access to dispute settlement on regulatory matters.

Mining investors need a dispute settlement mechanism in which they may participate directly. Under the LOS Convention, a miner must request its government bring a dispute settlement case on the miner's behalf. Experience indicates that the United

States government will find times when, for sound reasons of policy, it does not wish to do so. In such cases, the miner will be without redress. Only with the right to bring an action directly on its own behalf can the miner be assured of due process. We note as an important postscript that the Convention prohibits even member governments from challenging discretionary acts of the Seabed Authority.

- **commit the United States to participation and implementation of the Convention regime and possibly major changes in the United States seabed mining law and program some years before the United States has decided to ratify the Convention.**

The procedure contemplated currently in the United Nations is that the document that implements the changes in the Convention will be a Protocol for Provisional Application of the 1982 Convention, incorporating the "interpretation" provisions set out in the "Draft Agreement". States that indicate the intent of becoming Parties to the 1982 Convention will be permitted to participate in the Council and presumably the other organs of the Seabed Authority. The details of how this participation would work have not yet been spelled out. Nevertheless, we have been told that the United States would participate in the Authority some years before it must decide whether to ratify or reject the Convention. This would provide the benefit of enabling the United States to assess the reasonableness of the Council and Authority in implementing the regime. But it would also have the effect of severely and adversely intertwining the United States ocean mining program and the international regime some years before the Administration presents the treaty to the Senate for advice and consent.

What effect would this procedure have on the present position of the United States concerning the legal status of the seabed and its resources? After several years of participation, how would the United States protect its interests in ocean mining in the event that it decided not to become a Contracting Party? How will the vast number of ambiguities be resolved. Even after reading the "Draft Agreement" thoroughly and be briefed on it, we are left wondering how the system would work. For example, we remain mystified about how the revised Review Conference would work. These and the voluminous ambiguities and unknowns in the Convention force the United States licensees to believe that the current approach leads to a dead end.

AMERICAN
MINING
CONGRESS
FOUNDED 1897

1920 N Street NW, Suite 300
Washington, DC 20036-1662
202 861-2800
Fax 202 861-7535

John A Knebel
President

STATEMENT OF RICHARD J GREENWALD
PRESIDENT
OCEAN MINING ASSOCIATES

AS AN

ADDENDUM TO THE STATEMENT OF BRIAN J. HOYLE
ON BEHALF OF
THE UNITED STATES OCEAN MINING LICENSEES
ON
REAUTHORIZATION OF
THE DEEP SEABED HARD MINERAL RESOURCES ACT OF 1980
AND CONTINUATION OF THE NOAA OCEAN MINING PROGRAM
BEFORE
SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO AND
THE OUTER CONTINENTAL SHELF
COMMITTEE ON MERCHANT MARINE AND FISHERIES
UNITED STATES HOUSE OF REPRESENTATIVES

APRIL 26, 1994

My name is Richard J Greenwald. I am President of Ocean Mining Associates of Gloucester Point, Virginia Ocean Mining Associates (OMA) is a Virginia partnership among domestic subsidiaries of the Sun Company, USX Corporation, and Union Miniere, S.A., of Belgium OMA and its predecessors-in-interest have engaged in research and development related to deep seabed manganese nodules since 1962

OMA holds a deep seabed mining exploration license issued by the National Oceanic and Atmospheric Administration (NOAA) The license is valid, given due diligence, until 1999

OMA has joined with the other United States licensees in the statement of Mr. Brian J. Hoyle to your subcommittee today This OMA statement is an addendum to his statement and is given for the purpose of elaborating on the importance of Reauthorization of the Deep Seabed Hard Mineral Resources Act of 1980 (DSHMRA) and to continuation of the vital environmental research being carried out by NOAA

The ocean mining industry feels it has been well served by NOAA's Ocean Minerals and Energy Division's environmental research over the last five years As set forth in the Deep Seabed Hard Mineral Resources Act (DSHMRA), NOAA has striven to conduct a sound environmental research program with the goal of establishing a stable environmental regime for the United States ocean mining industry to operate under DSHMRA states that "The Administrator also shall conduct a continuing program of ocean research to support environmental assessment activity through the period of exploration and commercial recovery authorized by this act, (including the study of) the long and short

term effects of commercial recovery on the deep seabed biota " NOAA is on the verge of obtaining this critical environmental data by conducting carefully planned, cost-effective environmental research that we believe will result in effective, reasonable and defensible environmental regulations

There are a number of reasons why industry feels NOAA's deep ocean mining research should be conducted now First, NOAA is responsible for setting the terms, conditions, and restrictions (also known as TCR's), including monitoring procedures that the licensees will have to follow when commercial recovery operations begin. How can NOAA set valid and defensible TCR's if they do not have the data necessary to do so? To this end we feel that NOAA must conduct a continuing environmental research program until such data are acquired

Secondly, without a stable and known environmental regulatory framework, the ocean mining industry will face costly delays when it is ready to mine The need for such a framework is a direct result of the fundamental lack of scientific knowledge of deep sea ecology and hence the environmental consequences of deep ocean mining. The lack of fundamental environmental information has directly or indirectly resulted in some of the adverse environmental consequences resulting from land-based mining. We have a unique opportunity to avoid this problem in the deep sea by conducting the environmental research now, well in advance of the commercial development of the manganese nodule mineral resource

Finally, environmental research must be conducted by the federal government in order for it to have credibility and for subsequent federal and industry actions to be legally defensible No matter what environmental research the industry conducts, advocates for the environment would challenge the results. Only government research will have sufficient credibility to address the concerns of environmental advocates.

NOAA and its licensees have cooperated closely under the guidance of the Act to build a solid foundation for environmentally informed regulatory actions and environmentally responsible industrial activities The NOAA licensees have contributed much ship time to this effort over the years, plus a large body of physical and biological data The licensees, working closely with NOAA, have also set aside representative seabed mining areas as preservational or stable reference areas. To our knowledge, no such environmental monitoring areas have been proposed by the United Nations Law of the Sea Convention or by other mining countries. As a consequence, the preponderance of recent worldwide ocean mining environmental research has been conducted by NOAA

Industry feels that NOAA's current experiment, the Benthic Impact Experiment (BIE), is a well conceived program of environmental research and international cooperation designed to collect the data necessary to assess the environmental concerns associated with deep seabed mining The BIE is designed to assess the environmental impact of deep seabed mining on the organisms living in and on the ocean floor The experiment consists of blanketing a one to two square kilometer area of the seafloor with sediments in a manner

simulating the mining of manganese nodules. The response of the benthic organisms to different levels of sediment burial will be indicative of the impacts to be associated with commercial mining. The BIE was successfully initiated by NOAA in August 1993 and yearly sampling cruises are planned for the next five years to collect the data necessary to assess the impacts of seabed mining

Successful completion of the BIE research is directly dependent upon reauthorization of the NOAA Ocean Minerals and Energy Division program for five years at current funding level. NOAA has invested several million dollars over the last three years to initiate the BIE project successfully. Industry feels this money would be sorely wasted should the subsequent sampling cruises over the next five years be discontinued due to lack of funding. NOAA has carried out the BIE research with agencies of several other governments, namely Russia and Japan. This international research collaboration has enhanced both the technical and cost effectiveness of NOAA's ocean mining environmental research effort.

Successful completion of the BIE will produce the following results:

1. Valid and defensible environmental impact data will be collected for use in formulating and implementing environmentally responsible governmental policies, regulations and license terms, conditions and restrictions, including monitoring procedures, and

2. Industry will be provided with a procedural and reasonable set of environmental data, guidelines and obligations upon which to base its commercial planning, technical designs, and future operations

NOAA is on the verge of completing definitive environmental research on the benthic impacts of deep ocean mining. Without completion of the BIE and related research, NOAA may not be in a position to respond in a timely and legally defensible fashion when industry, reacting to improved market conditions, applies for commercial recovery permits. Any delays in these federal actions when markets improve and licensees apply will tend to be exceptionally costly and otherwise disruptive to industry.

The United States has captured an internationally recognized leadership role in deep seabed environmental research. To maintain this leadership status, Congress must enable NOAA to retain its staff and skills in this area, for employment as regulators and researchers. Whether or not the United States ratifies the Law of the Sea Convention, the need for the experience and leadership of NOAA's Ocean Minerals and Energy Division staff in this kind of work will continue. A review of the Law of the Sea record will show that the United Nations staff has very little experience with environmental regulation and research. Thus NOAA's mission, stewardship of the world's oceans, will remain current and vital to the Nation, its ocean miners, and the international community under any future ocean mining scenario

OCEAN ADVOCATES
a voice for the silent sea

April 26, 1994

Statement of Sally Ann Lentz

Before the Subcommittee on Oceanography, Gulf of Mexico and Outer Continental Shelf

of the Merchant Marine and Fisheries Committee

Concerning

The U.N. Law of the Sea Treaty

and

Reauthorization of the Deep Seabed hard Minerals Act

On Behalf of

Ocean Advocates

Blair Station Box 1073, Silver Spring, MD 20910
Columbia Office: 6424 Misty Top Pass, Columbia, MD 21044
TEL: (0)301-972-8849 FAX:(0)410-5315237

Statement of Sally Ann Lentz
Before the Subcommittee on Oceanography, Gulf of Mexico,
and the Outer Continental Shelf
April 26, 1994

I am Sally Ann Lentz, Co-Director and General Counsel of Ocean Advocates, a non-profit organization devoted to the protection, conservation and wise use of marine and coastal resources. In all of our activities we are dedicated to protecting the oceans for the people and wildlife that depend upon them for life, livelihood and enjoyment. I appreciate the opportunity to testify at this hearing on the U.N. Law of the Sea Treaty (LOS) and reauthorization of the Deep Seabed Hard Minerals Resources Act (DSHMRA).

While Ocean Advocates is a relatively young organization, our individual staff members have, for more than a decade, addressed concern about environmental consequences associated with the uses of our oceans and coastal areas. We have engaged in a wide range of scientific, technical, and legal research and have addressed marine public policy issues in both domestic and international fora in an effort to focus the attention of decision makers and resource managers on the need for rational and informed marine policies.

The ocean, though vast and covering over 70 percent of the earth, is a vulnerable and complex living ecosystem. Far from a desolate wasteland, the ocean teems with life, from the continental shores to the abyssal plain, from the microscopically thin "skin" of the ocean surface throughout its depths to the bottom of the deepest trenches, nearly 7 miles down. Virtually all the major taxonomic divisions of life are represented in the ocean (in contrast, only one third are represented on land). Thousands, or perhaps millions (the jury is still out on this estimate), live in or depend upon the oceans -- including humans.

Too often, however, our ocean and coastal resources are mismanaged due to narrow, short range special interests, with inadequate scientific understanding of the consequences. We have seriously damaged some of our coastal waters as a consequence of many activities including the dumping of wastes at sea. Much less is known about long-term threats to the deeper oceans, but there are strong signs of damage there, too. Deep sea fish have measurable accumulations of toxins from land-based human activities. Where ocean dumping of sewage sludge has been monitored in deep waters off the continental margin (i.e., the so-called 106-mile dump site), there has been detectable loss of diversity within the biological community.

Why should we be concerned about the health of the ocean? Besides its wealth of living resources -- food, sources of medicine, natural products of use to industry and agriculture -- it may be the system able to maintain a relatively stable life-supporting atmosphere and climate once the terrestrial ecosystems are extinguished by growing human populations and demands for natural resources. If we do not allow that system to continue to function normally, with the greatest possible adaptive capacity, life as we know it may cease to exist on earth. As terrestrial ecosystems decline in both size and function, a healthy ocean becomes ever more crucial. The fact that it is so big and we humans cannot occupy it may be the one thing that saves us and other life on earth. Nevertheless, if we continue to misuse and mismanage the ocean in our efforts to exploit its resources, it may cease to serve effectively as a regulator of the earth's environment, since some of that regulatory capacity depends upon the living component of the ocean ecosystem.

I personally began my professional work on the specific issues before this Subcommittee as a legal intern at the Center for Law and Social Policy here in Washington, D.C. in 1980. At that time, our efforts were focused on encouraging U.S. ratification of the Law of the Sea Treaty and ensuring that the Deep Seabed Mining Regime (whether international or domestically-driven) adequately addressed environmental considerations. My objectives are the same today. Since that time, two developments have occurred which raise serious doubts about the viability of a deep seabed mining program. These two developments are: (1) increased uncertainty about the environmental impacts of mining activity and (2) significant changes in U.S. interests in the metals market.

ENVIRONMENTAL CONCERNS ABOUT DEEP SEABED MINING REMAIN UNANSWERED

The recent resurgence of interest in these issues, resulting from the impending entry into force of LOS, is quite striking in that the major environmental concerns that were raised over a decade ago persist today. Despite NOAA's valiant research efforts, we are no closer to resolution of basic environmental questions associated with the proposed activity of deep seabed mining. That is not to suggest that NOAA's efforts have been without value. To the contrary, much has been learned. Indeed, scientific research over the past decade, conducted both in the context of DSHMRA, as well as separately, has increased our knowledge base such that we now realize how little we know about deep ocean marine ecosystems, and the major obstacles that must be overcome to carry out meaningful research.

Knowledge about the Deep Ocean Ecosystem is Lacking

Concerns about disturbing the deep sea ecosystem were raised early on in a statement by Dr. Howard Sanders of Woods Hole

Oceanographic Institution at a hearing before this Subcommittee prior to enactment of the Marine Protection Research and Sanctuaries Act. While this statement was made over a decade ago, in the context of dumping of nerve gas rockets in the ocean, his point is relevant to the issue at hand:

> The ocean floor at these [deep sea] depths lies below the thermocline. Therefore, the area of discharge, dumping or drilling will be in a region of remarkable stability regarding its physical properties. Temperature, salinity, oxygen conditions, and other factors in contrast to shallower waters are essentially unvarying and have changed little over many thousands and even millions of years.
> In this context, we must bear in mind that the driving force of evolution is toward ever finer adaptations of an organism to its environment. Thus, under conditions of constancy and predictability over geologically long periods of time there have evolved in the deep sea a delicately attuned, highly sensitive assemblage of organisms with very narrow range of tolerances. Such communities can be expected to be most fragile. As a consequence, a perturbation or stress that might have little significance in the variable and less predictable shallow waters could have severe and perhaps catastrophic implications in the deep sea.

Sound scientific research is critically important to understanding the world's environment, how humans impact it and how it needs to be protected. As advocates concerned about marine conservation, we support research that increases understanding of the marine environment. We certainly support increased research on the deep ocean, as it is among, if not the world's least understood aquatic ecosystem. Given the large role played by deep ocean waters in global climate change and its interconnection with near shore systems, increasing the baseline knowledge of the deep ocean's biological and physical conditions is critical to understanding how human activities are altering and will continue to alter, the earth's environment.

We believe the questions that remain unanswered about the biology and processes of the deep ocean could be addressed by non-invasive research. From a purely scientific point of view, it is premature to attempt to measure the impacts of mining operations on the deep seabed before some of the more basic questions about biology in the deep are answered. Dr. Fred Grassle at Rutgers University and others involved in identifying biological diversity on the deep-sea bottom have revolutionized our perception of the ocean floor. Though the total diversity of species is arguable, it is very clear that diversity is high and that deep sea communities are poorly known and the biological processes are poorly understood. A comprehensive program of well

funded research on this ecosystem could provide much needed information that would be applicable to many important issues (such as climate change) in addition to deep seabed mining. It is not necessary for such research to be conducted in the context of assessing impacts of deep sea mining activities. However, unless a separate legislative initiative is instituted to provide funding for such research it should be included in the reauthorization of DSHMRA, via an amendment specifically mandating that deep ocean ecology research be carried out and that appropriate levels of funding be provided to support such research.

Environmental Impacts of Mining Remain Unknown

The specific environmental impacts anticipated from mining activities are linked to the nature of the proposed technology. The first generation mining technologies to be employed by U.S. consortia are all hydraulic type systems. Hydraulic systems-using either submerged centrifugal pumps or air lift systems - will recover nodules in a seawater slurry and pump them through a pipeline from a seafloor collector to a mining ship on the ocean surface. The hydraulic collector likely will sweep the bottom in nearly adjacent swaths; each swath may be up to 20 meters (65 feet) wide.

In addition to the nodules, bottom water, sediment and some macerated benthos will be drawn into the collector. Most of this extraneous material will be discharged at the seafloor. The remainder will be transported up the pipeline and, after separation from the nodules, discharged at the sea surface. These two activities, ejection near the seafloor, resulting in a benthic plume and the sea surface discharge resulting in a surface plume, are the two impacts upon which NOAA has focused its environmental research.

Benthic Plume Effects and Needed Research

The benthic plume effects result from the action of the nodule collector as it moves along the seafloor. This activity causes destruction of the benthos in its path and creates a plume of fine-grained sediment. This plume may bury (and consequently smother) smaller benthic animals and dilute their food supply at distances from the mine site. Despite efforts by NOAA to address this concern, "[t]he exact impact of increased sedimentation rates and particulate loads on the benthic fauna in the mining area of the Clarion-Clipperton Fracture Zone, according to NOAA documents, is not known at present."[1] Based on the research

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[1]. NOAA, "Environmental Research on the Potential At-Sea Effects of Deep Seabed Mining for Manganese Nodules," prepared for the Deep Seabed Mining Workshop, January, 1994, at p. 6.

conducted thus far, the effect on the benthos from the benthic plume is likely to be in the form of covering the food supply and clogging of respiratory surfaces of filter feeders, and is certain to include "blanketing." The recovery rate from these effects, according to NOAA is as yet unknown, but "probably slow," on the order of years to tens of years or longer. The overall significance of the impact is also said to be unknown. The definition of "unknown" in this context is stated as meaning that "very little or no knowledge exists on the subjects and predictions are mostly based on conjecture." (See Table A.)

Not only is there a lack of knowledge about the consequences of the benthic plume, but the compounding lack of information about the deep sea ecosystem mentioned above, includes a lack of understanding about benthic communities in particular. We simply don't know enough about the benthic communities to determine whether any of the species are endangered and thereby in need of greater protection to ensure biodiversity. Some scientists believe that the potential for major loss of species is great. As stated by one scientist:

> The latitudinal and longitudinal ranges of the vast bulk of deep-sea species, or even a representative subset, remain unevaluated; we thus cannot predict how large an area can be mined before substantial species extinctions begin to occur. One thing is clear, however. The area of maximum biogeochemical province (as evinced by the presence of commercial-grade nodules); it is likely to encompass the total range of numerous benthic species keyed to subtle variations in the deep-sea environment. Thus, it is quite conceivable that exploitation of substantial proportions of the existing mining claims on time scales of decades will yield extinction of large numbers (100's to 1000's) of benthic species. Without dramatically more information on species ranges and tolerance to mining disturbance, species extinctions on a grand scale cannot be ruled out.[2]

The ability to measure benthic impacts is further hindered by temporal variations in distribution of organisms in the deep ocean ecosystem. In addition to basic research on deep ocean ecosystems and benthic communities, improvements to NOAA's Benthic Impact Experiments (BIE) Program are critically needed and include: (1) development and implementation of a methodology to quantitatively evaluate response of benthos to

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[2]. Letter from Professor Craig R. Smith to Dr. David Evans, 31 January 1994, in NOAA, "Deep Seabed Mining; Workshop Report, March 1994.

resedimentation; (2) inclusion of a temporal control site; (3) inclusion of a microbial or nodule fauna impact analysis; and (4) complete identification of the species in samples already taken.

Surface Plume Impacts and Needed Research

As regards the surface plume, it was anticipated that potential effects would include increased nutrient levels, resulting in increased primary productivity and changes in phytoplankton species composition or introduction of deep-sea microbes to the surface. In addition, an increase of dissolved trace metals was expected to result in inhibition of primary productivity, and supersaturation in the dissolved gas content was expected to result in embolisms. The NOAA research completed in FY 1985 concluded that the probability of such impacts is very low and that if they were to occur that the recovery rate would be rapid (on the order of days to weeks). No detectable effect was expected and it was predicted that there would be no overall significance of this impact.

However, since 1985, our knowledge about the sea surface ecosystem (referred to as the microlayer) has increased dramatically. Indeed, pollution levels in some open ocean waters are of concern, particularly at the surface. Dr. John Hardy of Western Washington State University has described the microlayer at the ocean surface as a thin skin, less than a millimeter in depth, which naturally supports high concentrations of nutrients and microorganisms including sensitive larvae and also harbors high concentrations of pollutants as much as a thousand times greater more concentrated than in waters below.

Because the unique nature of the microlayer and its special function in the marine ecosystem were not recognized at the time, surface plume research conducted in the past did not measure microlayer impacts. Our current understanding of the microlayer suggests that the impacts of the surface plume may indeed be significant, far reaching and long term, and additional research is needed to make that determination.

Broader Environmental Impacts Must Be Assessed

In addition to the research noted above on deep ocean ecosystems, benthic communities and plume impacts, it is critical that the full range of environmental costs and consequences associated with the activity be undertaken. These broader impacts, from the point of collection to the disposal of processing waste must be assessed.

In sum, the potential environmental consequences of deep seabed mining are significant, and pose special risks to maintenance of marine biological diversity. Research thus far has failed to answer fundamental questions about potential

impacts. Basic research on deep ocean ecology and benthic communities specifically must go hand-in-hand with analysis of the particular impacts of mining activities, which must include microlayer impacts. While basic research need not be conducted in the context of DSHMRA, it is critical to achieving a scientifically valid assessment of the impacts of mining. Absent other avenues, DSHMRA should be used as the vehicle to provide the mandate and funding to ensure that the necessary basic research is undertaken simultaneously with the research on impacts of mining activities and prior to issuing any permits for commercial mining.

THE MARKET FOR DEEP SEA MINERALS IS FAR IN THE FUTURE

Since DSHMRA was enacted, the world metals market has plummeted. The market is currently depressed and there is no compelling need for deep sea bed mining in the foreseeable future. The glut of metals on the world market is due in part to new discoveries of land-based sources of minerals and more efficient land-based mining practices. The break-up of the Soviet Union has resulted in former Soviet bloc countries aggressively marketing their resources, which has added to the glut. The long term market for deep seabed minerals may be further hindered by conservation, recycling, land exploration, and the introduction of material saving technologies. Some predictions suggest that seabed mining may be competitive with land-based mining by the year 2005.[3] Others suggest that a viable commercial deep seabed mining potential is not likely until well into the 21st century, by some estimates, even beyond the year 2080.[4]

The largely diminished market need - at least in the short term - for deep seabed minerals provides the opportunity to carefully consider the environmental risks associated with the activity and, if unacceptable adverse impacts are found, allows sufficient time for modifications of technology to eliminate or minimize those risks.

There are those who claim that, from an environmental perspective, mining of the deep seabed is preferable to land-based mining.[5] Given the tremendous uncertainties about

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[3]. NOAA Workshop Report at 13.

[4]. Hoagland, Porter, "Manganese Nodule Price Trends," in NOAA Workshop Report, Appendix B.

[5]. Some have argued that many mineral reserves exist in environmentally sensitive areas, such as rain forests, and that seabed mining would be environmentally benign compared to such land-based mining. However, it is the potential need for nickel in

environmental impacts of deep seabed mining, such a statement is premature at best.

THE PRECAUTIONARY APPROACH TO DEEP SEABED MINING ACTIVITIES

Over the past few years, we have seen the emergence of a new concept which provides a much needed framework to assist in decision making on environmental issues. This new concept - the precautionary approach - introduces a new way of assessing activities which have an environmental impact. The precautionary approach is described in Principle 15 of the Rio Declaration and Chapter 17 of Agenda 21. We believe it is incumbent upon those who endorsed the Rio Declaration to encourage application of the "Precautionary Approach" for protection of the marine environment. Specifically, paragraph 17.22 of Agenda 21 states that in order to achieve protection of the marine environment:

> ...it is necessary to:
>
> (a) apply preventive, precautionary and anticipatory approaches so as to avoid degradation of the marine environment, as well as to reduce the risk of long-term or irreversible adverse effects upon it;...

This approach reflects an increasing shift in thinking, both domestically and internationally, away from the view that pollution can be controlled through "allowable" emissions or discharges (the "assimilative capacity" view) to the view that pollution prevention can be achieved only through minimizing inputs and aggressively pursuing zero discharge of contaminants, which is reflected in the so-called "precautionary approach" to marine pollution. This approach calls for action to be taken to reduce environmental inputs even before the onset of damage, if damage is considered likely."[6]

The United States has embraced the precautionary approach in a number of international agreements, including a resolution adopted under the London Convention 1972 (LC), as well as the Rio

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particular which is the driving force behind deep seabed mining. Existing reserves of nickel are plentiful in Canada, Australia, South Africa and Russia, among others. Land-based mining of nickel does not threaten to destroy our earth's precious rain forests. In addition, recycling of nickel in the form of stainless steel recycling and captured dust from smoke stack scrubbers is already a reality and is increasing.

[6]. Jackson, Dr. Tim and Peter J. Taylor, "The Precautionary Principle and the Prevention of Marine Pollution," 1991, Stockholm Environment Institute, Box 2142, S-103 14 Stockholm; and Centre for Study of Environmental Change, Lancaster University, LA1 4YF.

Declaration as related to marine environmental protection. Indeed, it was agreed at the March, 1994, meeting of the Marine Environment Protection Committee of the International Maritime Organization to widely apply the precautionary approach to the work of the IMO. Now the organization will focus on developing guidelines for implementation of the precautionary approach within IMO. All regulatory activities relating to protection of the marine environment, both domestic and international, must be reassessed in light of the precautionary principle.

There has been a great deal of debate over the proper terminology -- precautionary approach vs. precautionary principle. But what we are talking about here is a framework for decision making that attempts to replace the failed efforts of the risk assessment approach to marine pollution which has not provided adequate environmental protection. There is a great deal of misunderstanding about what the precautionary approach really means. Attachments B and C are tables that further define the precautionary approach as we see it and distinguish it from current practice.

In the context of decision making on the future of the deep seabed mining program, application of the precautionary approach mandates that additional research be completed before any commercial mining activities occur. Given the lack of a compelling need to engage in mining of the deep seabed at this time, and the potentially significant environmental risks that have been identified, we have the opportunity and the need to improve our knowledge about those risks and to take the necessary action to prevent adverse impacts. Specifically, the uncertainties associated with our knowledge base about deep ocean ecosystems, benthic communities and plume impacts (including microlayer impacts) require, under a precautionary approach, that all available preventive measures be taken prior to engaging in this activity.

Another major element of the precautionary approach is a shift in the burden of proof from requiring those who oppose an activity to prove harm, to requiring those who propose an activity to demonstrate that no adverse impact will result. The proponent may be the applicant and/or the government issuing the permit. In addition, those who directly benefit from the activity must bear the full environmental costs associated with it - from the cost of preliminary research to the cost of environmental impacts. Therefore, we believe that the financial cost of carrying forward the necessary research on impacts be born by the applicants and exploration license holders. In contrast, the basic research on deep ocean ecosystems referred to above is appropriately funded by government.

Finally, the precautionary approach embodies a commitment to clean production to minimize waste and other environmental

impacts. In the context of deep seabed mining, an assessment must be made of the proposed technology to determine whether clean production equipment and practices are being employed at every phase of the activity - from the point of collection to disposal of waste materials generated in processing.

Indeed, it has been suggested that, "the basic-level environmental research should lead the engineering development of the technologies for mining."[7] Under the circumstances, where there is no compelling need to place the development of seabed mining on a fast track, such a course is easily obtainable and reflects full application of the precautionary approach.

In sum, the precautionary approach, if properly applied, would require that the necessary research on deep sea ecology and the impacts of deep seabed mining be completed prior to issuing permits for commercial recovery. Efforts to eliminate adverse impacts through modifications in technology or practice would be required. And the applicants would be required to bear all of the financial costs associated with the activity. Under the current circumstances, where there is no pressing need for commercial recovery of nodules, there is ample opportunity to fully implement the precautionary approach.

IT IS IN THE BEST INTERESTS OF THE UNITED STATES TO RATIFY THE LOS TREATY

Ocean Advocates strongly supports United States ratification of the Law of the Sea Treaty (LOS Treaty). In general, the LOS Treaty represents the most important international agreement affecting the oceans. Negotiated over the course of 10 years, it was the largest single United Nations negotiation process ever to be undertaken. By refusing to support the LOS Treaty, the United States rejected a golden opportunity to promote comprehensive and effective management of ocean issues by the world community. While we have never agreed that the perceived disadvantages of the deep seabed mining provisions outweighed the overall benefits of the other provisions, changed circumstances and renewed efforts to resolve U.S. concerns about the deep seabed mining regime have lifted past obstacles to U.S. ratification.

The ocean knows no boundaries. International cooperation in managing and protecting the resources of the sea is necessary to ensure protection of national interests. In addition to codifying what already was perceived as customary international law, the LOS Treaty established norms with regard to a wide range of marine public policy issues, including the establishment of

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[7]. Letter from Stephen A. Swift, Woods Hole Oceanographic Institution, to W. Stanley Wilson, January 19, 1994, in NOAA Workshop Report, Appendix B.

rights with respect to navigation and fisheries, as well as important obligations to protect the marine environment and conserve marine living species.

Apart from the deep seabed mining provisions of the LOS Treaty, the United States considers the remainder of its provisions to constitute customary international law. In proclaiming a 200-mile Exclusive Economic Zone (EEZ) off the United States on March 10, 1983, President Reagan stated, "the Government of the United States of America desires to facilitate the wise development and use of the oceans consistent with international law." With its entry into force approaching in November, United States ratification would demonstrate our intent to be a major player in further shaping international ocean policy. Perhaps more important, while United States reliance on customary international law has some advantages, a number of important U.S. interests cannot be adequately protected unless entry into force of the Treaty is accompanied by wide participation by the global community.[8]

A number of important provisions will probably be accepted as reflecting customary international law once the LOS Treaty enters into force, and this will benefit U.S. interests even as a non-party. For example, the important regime concerning transit passage through straits used for international navigation is one such provision. Currently, there is a great deal of uncertainty associated with regard to high seas freedoms which has strained relations among many nations. While there have been no specific incidents of an LOS Treaty party denying navigational rights to the United States as a nonsignatory, as one commentor notes, "a climate of periodic discord, confusion, and minor incidents has developed."[9] The benefits to the United States of these provisions is without question, and our failure to ratify the Treaty could diminish our ability to enforce them:

> This climate of discord has the potential to be particularly costly for the United States - as the world's leading maritime power - in this post-cold war era. As pointed out recently by Admiral Schachte [Acting Judge Advocate of the U.S.], the successful application of seapower by the United States is critically dependent on freedom of navigation and

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[8]. Much of this discussion is drawn from Jonathan I. Charney, "The United States and the Revision of the 1982 Convention on the Law of the Sea," Ocean Development and International Law, Volume 23, pp. 279-303.

[9]. Galdorisi, George and Jim Stavridis, "Time to Revisit the Law of the Sea?," Ocean Development and International Law, Volume 24, pp. 301-315, 1993 at 305.

> overflight. Without a treaty, the United States has only one basic instrumentality to ensure these freedoms, should one or more nations fail to abide by customary law - diplomatic protests and related freedom of navigation assertions, ultimately backed up by the threat of force. To say the least, this method is not without political cost.[10]

Codification of navigational rights under the LOS Treaty is likely to strengthen its acceptance as customary law and will foster more consistent state practice. U.S. ratification will clearly benefit U.S. interests.

The United States, as a non-party, could continue to participate in other international fora (referred to in the Convention as "competent international organizations") which implement other international legal regimes affecting ocean interests. Law-making efforts carried out in the International Maritime Organization (IMO) in relation to maritime transport, in the London Convention (LC) and within the United Nations Environment Programme's (UNEP) Regional Seas network further develop the more general provisions on marine environmental protection in the LOS Treaty. However, U.S. participation in these other fora may be adversely affected by its exclusion from the LOS Treaty, which represents a potentially significant disadvantage.

Choosing not to ratify the LOS Treaty has other clear disadvantages as well. As a non-party, the United States would be precluded from participating in certain institutions of the regime which affect important U.S. interests. These include: (1) Commission on the Limits of the Continental Shelf (Article 76.8 and Annex II); (2) protection of the marine environment by the International Seabed Authority (Article 145); (3) Accommodation of activities in the area with other ocean activities (Article 147); (4) Dispute settlement systems for activities in the area (Articles 186 to 191); and (5) General law of the sea dispute settlement systems (Articles 279 to 299, Annexes V to VIII.

In addition, the United States would forfeit the right to object to violations of certain provisions beneficial to U.S. interests by state parties which are bound to the Convention. These provisions include: (1) Specific limits on archipelagic baselines (Article 47); (2) specific criteria for the designation of archipelagic sea lanes and air routes (Article 53.5); (3) specific limits on artificial island safety zones (Article 60.5); (4) specific limits on seaward extension of the continental shelf regime (Articles 76.4 to 76.6); and (5) marine scientific research complied consent (Article 252).

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[10]. Id.

As regards environmental concerns, generally, one of the most important features of the LOS Treaty is its dynamic, evolving status. Articles 237 and 311 establish a symbiotic relationship between the Convention and other issue-specific environmental agreements, such as the LC, vessel source pollution treaties, and Regional Seas agreements. As long as those agreements are consistent with Convention objectives, the adoption of issue-specific international rules and standards under other agreements are considered applicable, as well, to all LOS Treaty parties.

As noted above, many of the LOS Treaty provisions can be addressed in the context of issue-specific global, regional or bilateral agreements. Also noted above is the fact that many of the Treaty provisions represent evolving customary international law -- advances which have or are achieving the status of agreed upon rights and duties given that they represent the prevailing practice of nations, including the United States. But other provisions of the LOS Treaty -- such as those establishing dispute resolution mechanisms, or procedures for allowing marine scientific research to occur in EEZ waters of countries -- require that the Convention come into force before they can be effective. Moreover, the array of provisions in the LOS Treaty represent a package that binds the global community of nations to uniform, minimum requirements.

Given our interest in U.S. ratification of the LOS Treaty, Ocean Advocates fully supports efforts by the State Department to resolve outstanding issues concerning the deep seabed mining regime and decision making process. Not having seen a final agreement reflecting the outcome of these negotiations, we are not in a position to comment on the specifics of the agreement. It is our understanding, however, that some progress has been made to strengthen the environmental protection provisions of the Treaty in the context of these negotiations. We strongly support efforts in that direction. In addition, we support the development of a protocol of provisional application as a mechanism for securing U.S. ratification and instituting the necessary changes.

DSHMRA REAUTHORIZATION

As regards the issue of DSHMRA reauthorization, in light of recent developments in the context of the LOS Treaty, if the U.S. goes forward with ratification, implementing legislation will be needed. Such legislation could take the form of amendments to a reauthorized DSHMRA or stand alone legislation. Such an approach is consistent with the original intent of DSHMRA to provide interim legislation, pending entry into force of the LOS Treaty. If the U.S. does not ratify the Treaty, from an environmental perspective, the advantage of reauthorizing DSHMRA lies in the

opportunity to fund completion of the research that has been started on benthic impacts, as well as to improve upon that research. As noted above, DSHMRA could also serve as a vehicle to fund basic research on deep ocean ecology. While our domestic law alone will not guarantee harmony with the international regime, it does provide a basis for continuing necessary research on environmental impacts which may not occur under the international regime. What is most preferable, however, is U.S. ratification of the Treaty and appropriate amendments to DSHMRA to implement the Treaty provisions. We therefore support reauthorization of DSHMRA to the extent that its provisions continue to promote environmental protection and facilitate the necessary research.

CONCLUSION

In conclusion, Ocean Advocates strongly supports United States ratification of the LOS Treaty as a means to further develop and promote, on a worldwide basis, environmentally sound marine public policy. In addition, we support reauthorization of DSHMRA to the extent that its provisions continue to promote environmental protection and facilitate the necessary research, including basic research in deep ocean ecology. Completion of the necessary research on impacts of mining technology prior to issuance of commercial licenses is consistent with the precautionary approach to protection of the marine environment. The likelihood that a viable market for seabed mining is decades away provides ample time to properly assess environmental impacts and to shape the technology to eliminate and minimize risks.

ENVIRONMENTAL RESEARCH ON THE POTENTIAL AT-SEA EFFECTS OF DEEP SEABED MINING FOR MANGANESE NODULES

TABLE A.

Summary of Initial Environmental Concerns and Potential Significant Impacts of Mining

INITIAL CONDITIONS[1] / DISTURBANCE	PHYSICO-CHEMICAL EFFECTS	POTENTIAL BIOLOGICAL IMPACTS (REMAINING CONCERNS IN CAPITALS)	POTENTIAL SIGNIFICANCE OF BIOLOGICAL IMPACT: PROBABILITY OF OCCURRENCE	RECOVERY RATE	CONSEQUENCE	OVERALL SIGNIFICANCE
COLLECTOR	• Scour and suspend sediments	DESTROY BENTHIC FAUNA IN AND NEAR COLLECTOR TRACK	Certain	Unknown[3] (Probably Slow)	Adverse	Unavoidable • (Uncertain Sig)
	• Light and Sound	Attraction to new food supply; possible temporary blindness	Unlikely	Unknown (Probably Rapid)	Uncertain	None
BENTHIC PLUME	• Increased sedimentation rate and increased suspended matter ("rain of fines")	• EFFECT ON BENTHOS				
		- Covering of food supply	Likely	Unknown[3] (Probably Slow)	Adverse	Unknown •
		- Clogging of respiratory surfaces of filter feeders	Likely	Unknown[3] (Probably Slow)	Adverse	Unknown •
		- Blanketing	Certain	Unknown[3] (Probably Slow)	Adverse	Unknown •
		• Increased food supply for benthos	Unlikely	Rapid[4]	Possibly Beneficial	None
	• Nutrient/Trace Metal increase	• Trace metals uptake by zooplankton	Unlikely	Rapid	No detectable effect	None
	• Oxygen demand	• Lower dissolved oxygen for organisms to utilize; mortality from anaerobic conditions	Unlikely	Rapid	No detectable effect	None
SURFACE DISCHARGE Particulates	• Increased suspended particulate matter (sediments, nodule fragments and biota debris)	• Effect on Zooplankton				
		- Mortality	Unlikely	Rapid[4]	No detectable effect[2]	None
		- Change in abundance and/or species composition	Unlikely	Rapid[4]	No detectable effect[2]	None
		- Trace metal uptake	Unlikely	Rapid[4]	Locally Adverse	Low[5]
		- Increased food supply due to introduction of benthic biotic debris and elevated microbial activity due to increased substrate	Unlikely	Rapid[4]	Possibly Beneficial	None
		• Effect on adult fish	Unlikely	Rapid[4]	No detectable effect[2]	None
		• EFFECT ON FISH LARVAE	Uncertain (Low)	Uncertain (Probably Rapid)	Uncertain	Low •
	• Oxygen Demand	• Lower dissolved oxygen for organisms to utilize	Unlikely	Rapid	No detectable effect	None
	• Pynoclina accumulation	• Effect on primary productivity	Unlikely	Uncertain (Probably Rapid)	Unknown (Prob. Undetect)	Low
	• Decreased light due to increased turbidity	• Decrease in primary productivity	Certain	Rapid[4]	Locally Adverse	Low
SURFACE DISCHARGE Dissolved Substances	• Increased nutrients	• Increase in primary productivity	Very Low	Rapid[4]	No detectable effect[2]	None
		• Change in phytoplankton species composition or increased deep-sea microbes or spores to surface	Very Low	Rapid[4]	No detectable effect[2]	None
	• Increase in dissolved trace metals	• Inhibition of primary productivity	Very Low	Rapid[4]	No detectable effect[2]	None
	• Supersaturation in dissolved gas content	• Embolism	Very Low	Rapid	No detectable effect?	None

1. Includes characteristics of the discharge and the mining system.
2. Based on experiments/measurements conducted under DOMES.
3. Years to tens of years, or longer.
4. Days to weeks.

Uncertain = Some knowledge exists; however the validity of extrapolations is tenuous.

Unknown = Very little or no knowledge exists on the subjects; predictions mostly based on conjecture.

•Areas of future research
SPM = Suspended Particulate Matter

From NOAA Workshop

January 1984

Table: Precautionary Approach
Boyce Thorne-Miller
Ocean Advocates, 1994

Precautionary Approach *is*:	Precautionary Approach *is not*:
A guideline for positive actions promoting prevention of pollution.	A prescription for shutting down industries and other commercially profitable activities that pollute. (This is, however, the solution of last resort.)
A guideline for utilizing available scientific information to predict the potential of chemicals entering the marine environment to cause harm with due consideration to uncertainties and missing information.	A rejection of the application of scientific information to the decision making process.
A guideline for determining progressive reductions of contaminants entering the environment -- while the ideal goal is zero emissions of toxic materials, interim goals should be attainable reductions of the most critical contaminants.	A guideline for utilizing available scientific information to determine acceptable levels of new toxic contaminants entering the environment.
A guideline for determining acceptable levels of nutrient (fertilizer) inputs .	
A prescription for developing new clean technologies that eliminate the use and production of toxic substances.	A guideline for "plugging" pipelines and redirecting toxic wastes into other parts of the environment or into stockpiles.

Table: Assimilative Capacity vs. Precautionary Approach (page 2)
Boyce Thorne-Miller
Ocean Advocates, 1994

(Assimilative Capacity)	(Precautionary)
Elements:	*Elements:*
Risk assessment leading to acceptable levels of input of contaminants.	Prevention of contaminants entering the marine environment. Use of scientific information to prioritize reduction efforts.
Action after proof of damage.	Action before damage and before conclusive scientific proof (action based upon potential to cause damage).
Burden of proof upon those questioning a polluting activity.	Burden of demonstration upon those proposing the activity.
Implementation through discharge limits -- usually based upon water concentrations, not total input.	Implementation through clean production methods (reducing contamination at the source).
Consequences:	*Anticipated consequences:*
After two decades of implementation, marine pollution and degradation of coastal marine ecosystems has continued to increase.	Pollution will decrease if sources of contamination are reduced; coastal marine ecosystems will begin to recover if reductions continue.

Table: Assimilative Capacity vs. Precautionary Approach (page 1)
Boyce Thorne-Miller
Ocean Advocates, 1994

Assimilative Capacity Approach	Precautionary Approach
Assumptions:	*Assumptions:*
Chemical Contamination of the marine environment is acceptable up to the point of serious or irreversible harm.	Chemical contamination of the marine environment is to be avoided.
The ocean has a definable capacity to absorb and assimilate chemical contaminants without harming the biota of marine ecosystems.	The variety and complexity of the chemical contaminants, and the variety and complexity of biological species and interactions, make it impossible to accurately predict the effects of specific levels of contamination.
Even with scientific uncertainty regarding the effects of pollutants, it is possible, by risk analysis, to determine safe and unsafe (or acceptable and unacceptable) levels of particular contaminants entering the marine environment.	Because of the scientific uncertainties it is not possible to define safe and unsafe levels of contamination, and acceptable levels derived from incomplete information are not protective.

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Bury the Law of the Sea Treaty

By DOUG BANDOW

Not content with trying to run the American economy, President Clinton and his fellow would-be planners want to manage the rest of the globe as well. Their latest vehicle is an idea from the past: the Law of the Sea Treaty.

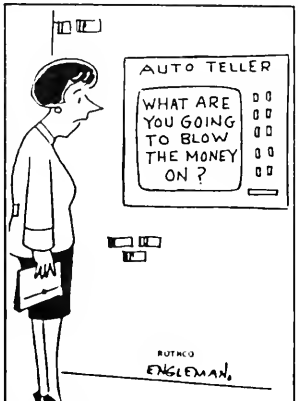
After spending more than a decade in limbo, the LOST, as the agreement is known, has been ratified by enough other countries to go into effect. The United States, however, refused to sign this so-called "constitution of the oceans," governing everything from ocean transit to seabed mining, after its approval by the Third United Nations Conference on the Law of the Sea in 1982. Until last November, Washington's steadfast opposition had held the number of ratifications below the necessary 60.

Indeed by the end of the 1980s some Third World countries were finally facing reality and admitting privately that the Reagan administration had been right to kill the LOST. But now the Clinton administration is engaged in informal negotiations to "fix" the accord and bring America into the system.

The LOST, which runs 175 pages and contains 439 articles, covers seabed mining, navigation, fishing, ocean pollution, marine research and economic zones. Much of the treaty is unobjectionable, or at least unimportant when in error. But not Part 11, as the Orwellian provisions governing seabed mining are called. This section can be fixed only by tearing it up.

The LOST's fundamental premise is that all unowned resources on the ocean's floor belong to the United Nations. The United Nations would assert its control through an International Seabed Authority, ruled by an Assembly dominated by poorer nations, and a Council, with three seats to the former Soviet bloc, that would regulate deep seabed mining and redistribute income from the industrialized West to developing countries. The Authority's chief subsidiary, the Enterprise, would mine the seabed with the coerced assistance of Western mining concerns on behalf of the Authority.

Any international regulatory system would likely inhibit development, thereby wasting much of the benefit to be gained from mining the oceans. But the Byzantine regime created by the LOST is almost unique in its perversity. For instance, the convention requires that private entrepreneurs transfer their mining technology to the Authority, for use by the Enterprise and developing states. Miners would have to pay their overseer, the Authority, and competitor, the Enterprise. Also favored are developing states and "landlocked and geographically disadvantaged" countries.



Many of these provisions, the Clinton administration explains, must be fixed before the United States joins. But even if foreign negotiators agree to make the system more investment-friendly, the LOST's coercive philosophical underpinnings will almost certainly remain.

The treaty was drafted in a different era, when communism reigned throughout much of the world and Third World states were proclaiming socialism as the true path to progress and prosperity. These nations saw the LOST as the leading edge of a campaign for a "New International Economic Order." American ratification of the LOST in anything close to its current form would help rehabilitate collectivist nostrums discredited around the globe — except, alas, in Mr. Clinton's Washington.

Some observers acknowledge the treaty's failings, but nevertheless contend that it has more than enough positive benefits to warrant signing. Gains in other areas, however, are limited at best. Sections governing fishing and maritime research, for instance, make few changes in current law. The treaty's authorization of 200-mile exclusive economic zones (EEZs) merely reflects what has become customary international law.

Perceived by some as far more important are the navigation provisions. Yet predictions that Washington's refusal to sign the LOST in 1982 would lead to chaos and combat were wrong. The prowess of the U.S. Navy, not the LOST, will always remain the ultimate guarantor of America's ability to roam the seas.

The final argument on behalf of the LOST is that no matter how unfavorable it may be for international mining, it is better than nothing. However, it would be simple to build an alternative arrangement among the industrialized states authorizing each nation to oversee its own companies' activities and creating a mechanism to resolve conflicting claims.

International treaties attract State Department negotiators like lights attract moths, but the LOST is a bad agreement and cannot be fixed without abandoning Part 11 in its entirety. The administration is unlikely to win such a change, however, especially with the treaty now ready to go into force.

If Washington ratifies an unacceptable accord, the biggest losers from limiting access to the ocean's vast potential would be the people of the Third World who most desperately need economic development. The administration should ignore the LOST and develop a market-oriented alternative, promoting the liberal international economic order upon which the future of all the world's peoples depends.

Doug Bandow is a senior fellow at the Cato Institute in W[illegible]

THE NEW YORK TIMES OP-ED THURSDAY, MARCH 31, 1994

Essay

WILLIAM SAFIRE

LOST at Sea

LONDON

LOST is a loser, but the U.S. is getting ready to sign on.

The Law of the Sea Treaty — its apt acronym LOST — has been ratified by 60 nations and will come into force on Nov. 16 of this year. The big question — one that will affect global business on and under the sea for generations — is whether the U.S. will subscribe to what third-world leaders and international bureaucrats hail as "the constitution of the oceans."

I have long argued we should not. Although many of the treaty's navigational and fishing provisions are unobjectionable, the core of the new international law is a collectivist cartel that conflicts with our national interests and betrays the spirit of capitalism.

Back in the 70's, as the have-not nations were touting a "new world economic order" to redistribute the world's wealth, Carterites and some liberal Republicans enlisted in the cause to declare the resources of the sea bottom "the common heritage of mankind." (That was before we became "humankind.")

Their essential idea was that entrepreneurs of the industrial nations would mine the seas for mineral wealth, just as explorers and discoverers did for centuries, but with this difference. Most of the product of free enterprise would be turned over to a Socialist "Enterprise," a vast new U.N. bureaucracy that would both regulate and compete with the miners of the sea.

The philosophy was wrong. John Locke, on whose writings Thomas Jefferson drew, held that when a person mixed his labor with a material resource, the person acquired a property right in that resource. That provided a profit motive, the incentive to explore and develop that created fortunes and built industrial democracies.

But under the Marxian collectivist philosophy expressed in the Law of the Sea, the ocean resources belonged not to the ones who found it, but to the United Nations. An OPEC-style cartel would graciously allow the developers to keep a part of their stake, but would demand they share their technology and would determine production and prices.

To its eternal credit, the Reagan Administration saw this basic conflict of ideology and said to LOST negotiators: Nothing doing.

Reagan's principled rejection, as Doug Bandow's recent Cato Institute study points out, caused great gnashing of teeth among diplomats at the U.N. and politicians in scores of third-world countries who had been counting on lifetime sinecures with perks in the LOST "Enterprise," to be based in sunny Jamaica.

Despite the drop in mineral prices that discouraged expensive seabed exploration, and blind to worldwide loss of interest in Socialist economics, bureaucrats pressed ahead.

Enter the Clinton Administration with its multinationalism and multiculturalism and multimultinism. Thanks to the U.N. representative, Madeleine Albright, and gnomes in the State Department who never met a global treaty they didn't like, LOST was found. Their technique was to

Sink the 'Law of the Sea.'

dress up the pact with market rhetoric, drop the requirement to share technology with the third world, and slightly modify other egregious offenses to free enterprise.

Something happens to diplomats who get involved in a diplomatic "process". The deal becomes the goal. Their measure of success is a flock of signatures on a document at a televised ceremony with souvenir pens handed out all around.

When the Clinton State Department is asked about the status of LOST, the answer is "Hasn't made it up to the seventh floor yet." Secretary Warren Christopher has his hands full with a threat from a bellicose North Korea, and cannot focus on convoluted philosophical disputes.

What will happen? When LOST gets up to foggy bottom's seventh floor, Christopher will lawyer it a little, make sure the U.S. has a veto, get some Pentagon admiral to praise its unnecessary legitimization of Straits of Gibraltar passage, and have President Clinton sign it as a symbol of the brave new multinational world.

Then the Senate will decline to ratify LOST because its central provision is anti-free-enterprise. Is such a display of disunion in the President's interest? Or in America's?

No. The time to drop the vast boondoggle of LOST is now. □

Dispute Resolution in UNCLOS and the Loss of U.S. Trade Sanctions to Protect Dolphins, Whales, Sea Turles, and Other Marine Living Resources

Richard J. McLaughlin
Associate Professor of Law and Director
Mississippi-Alabama Sea Grant Legal Program
University of Mississippi Law Center
University, MS 38677
Phone: (601) 232-7775
Fax: (601) 232-7731

Introduction

With the United Nations Law of the Sea Convention (UNCLOS) scheduled to enter into force on November 16, 1994, the Clinton Administration has come under increasing pressure to negotiate an acceptable compromise on the deep seabed mining provisions so that the United States can accede to the Convention. It is my contention that U.S. unilateral economic sanctions imposed against foreign nations as a method of protecting dolphins, whales, sea turtles, and other marine living resources violate several substantive provisions of UNCLOS. Consequently, if the United States becomes a State Party, the Convention's compulsory and binding dispute settlement provisions may prevent the United States from using economic coercive measures for environmental purposes as has been its practice for over two decades. This will have profound implications on the political dynamics of the debate over the Convention in the United States and could play a role in defeating U.S. ratification.

Unilateral Sanctions in Domestic Legislation

Unilateral trade sanctions have been an important component of U.S. fisheries legislation for many years. The Pelly Amendment, enacted in 1971, was the first statute to authorize an embargo of fisheries products against nations that diminished the effectiveness of international fishery conservation agreements. This was followed by several other laws such as the Marine Mammal Protection Act (MMPA), Section 205 of the Magnuson Fisheries Conservation and Management Act (MFCMA), and the Packwood-Magnuson Amendment, which use trade-related provisions to protect dolphins and whales.

Although trade restrictions have been incorporated in U.S. domestic fisheries legislation for over two decades, in the past five years there has been an avalanche of new embargo legislation. Since 1987, no fewer than seven pieces of domestic legislation have been enacted that provide for embargoes against the fisheries products of foreign nations that fail to comply with U.S. mandated fisheries management and conservation policies.

Moreover, in recent years the U.S. is enforcing these statutes much more aggressively than in the past. This, in turn, has caused some nations targeted by embargoes to begin to challenge the legality of U.S. actions. The best known example is the successful challenge brought by Mexico against the United States in GATT. In 1991 a dispute resolution panel ruled that the United States violated GATT by placing an embargo against Mexican yellowfin tuna after it failed to comply adequately with the dolphin protection provisions of the MMPA. The European Community has brought a similar GATT challenge and a decision is pending.

Despite its rebuke in GATT, the United States has in no fashion altered its trade sanction policies. The reason that economic coercive measures have become so entrenched in domestic fisheries laws is because a powerful political coalition made up of environmental organizations, commercial fishing interests, animal rights and consumer protection groups, organized labor, and an assortment of other groups have come to believe that the threat of unilateral trade sanctions is the most effective method of forcing other nations to adopt stricter environmental standards. Members of this coalition have not been hesitant in communicating their support of trade sanctions to Congress. For example, shortly after the GATT Tuna/Dolphin decision was handed down, one hundred members of the House of Representatives, and sixty-four Senators signed letters to then President Bush calling for a rejection of the GATT ruling and supporting the continued use of unilateral sanctions in domestic environmental legislation.

UNCLOS Dispute Settlement Provisions

This sets the stage for what may happen in the future if the United States accedes to UNCLOS. The Convention unquestionably contains the most detailed and sophisticated set of dispute settlement provisions of any international agreement in history. These provisions are very complicated and for purposes of this summary I can only point out a few of the most important features.

First, parties to a dispute are required to enter into negotiations prior to bringing a formal dispute settlement claim under the Convention. If settlement has not been reached by negotiation or non-binding conciliation then a party can request that "any dispute concerning the interpretation or application of this convention" be submitted for compulsory and binding settlement by one of several forums including the International Court of Justice, several kinds of arbitral tribunals, or the new International Tribunal for the Law of the Sea. There are a few activities that are exempted from binding settlement, but none would prevent a nation targeted by U.S. trade sanctions from challenging that policy under the Convention.

The most crucial features of the UNCLOS dispute settlement system are first, that there is a mandatory obligation that the parties to any dispute submit to the procedures; and second, that any decision rendered by the tribunal with jurisdiction is binding and final.

U.S. Actions Violate Substantive Provisions of UNCLOS

One obvious requirement is that the party bringing the dispute settlement challenge have some actionable claim based upon a violation of a substantive provision of the Convention. The purpose of U.S. trade embargo legislation is to force foreign nations to alter their fisheries conservation and management practices so that they comply with standards deemed adequate by the United States. Some U.S. statutes require embargoes to be imposed regardless of whether the non-complying practice occurs on the high seas, in a coastal state's EEZ, in the territorial sea, or in internal waters. Moreover, U.S. trade sanctions may be triggered even if a foreign nation's activities are fully consistent with its domestic laws, applicable international agreements, and existing customary international law.

Space restrictions allow for only a few general observations regarding these provisions. First, in areas of the high seas, mandatory cooperation among states is perhaps the most important and unifying feature of the Convention's legal regime dealing with the management of living resources beyond the EEZ. The clear purpose of article 116 and its references to articles 63-67, as well as of article 118, is to require international agreement before conservation measures can be prescribed for the high seas. Consequently, the United States lacks authority under the Convention to unilaterally prescribe conservation measures for distant high seas living resources.

UNCLOS grants coastal states almost unlimited authority to conserve and manage living resources within the EEZ, territorial sea, and inland waters. Although coastal state discretion over living resources in the EEZ is qualified by certain basic obligations of conservation, rational management and optimum utilization, significant safeguards have been included in the Convention to protect coastal states from losing their authority to manage their living resources as they choose. As a general rule, coastal states may impose whatever regulations they choose regarding the conservation and management of living resources within these zones consistent with the Convention and absent any contrary international agreement or customary law.

U.S. Defenses

The United States will argue that its use of economic coercive measures is a legitimate method of regulating its foreign trade which is a fundamental right of national sovereignty. In fact, it is not dictating how coastal states must conserve or manage their marine living resources, but merely enacting domestic trade controls to prevent its citizens from purchasing fisheries products from nations that do not apply acceptable environmental standards. Nothing prevents a targeted coastal state from continuing its existing practices as long as it is willing to find markets for its products elsewhere.

In response to this defense, I argue that there probably is no prohibition under customary international law that prevents the United States from imposing embargoes or other coercive measures for political purposes. However, this does not mean that unilateral measures cannot be prohibited by treaty. There is considerable agreement among international legal scholars that if a nation is a party to a treaty which

provides a dispute settlement mechanism that the nation cannot resort to self-help. This is especially true when the dispute settlement provisions provide for interim protective measures during the pendency of the action as is provided under UNCLOS.

Clearly it is not credible for the United States to impose an embargo that is intended to coerce another state into relinquishing certain rights granted to it under the Convention and then to argue that the affected state cannot invoke the Convention's dispute settlement provisions because the embargo is simply a domestic trade issue having nothing to do with the Convention.

Political Implications

The potential loss of trade sanction weapon may have profound political implications. First, those groups such as the environmental community, animal rights advocates, commercial fishing interests, and others that have traditionally supported U.S. membership in UNCLOS may begin to rethink their positions. As mentioned earlier, many people in the United States feel that unilateral trade sanctions are the only viable method that the nation has to force other nations to adopt stricter environmental standards. These groups will be very reluctant to risk the loss of the trade embargo weapon as a result of U.S. accession of UNCLOS.

Second, other groups such as organized labor, consumer protection advocates, and certain domestic industrial associations strongly support the use of U.S. trade restrictions primarily for international competitiveness and health and safety reasons. While these groups have traditionally had little direct interest or influence in the development of the law of the sea, they were very critical of the GATT Tuna/Dolphin decision and may not want the United States to enter into another international agreement which may find sanctions illegal. Whether this concern will translate into formal opposition to UNCLOS remains to be seen.

Third, the Senate will be acutely aware of the political fallout if it ratifies a treaty that prohibits the United States from enforcing very popular domestic environmental legislation such as the Marine Mammal Protection Act and the Endangered Species Act. Sixty-four Senators are already on record supporting the rejection of the GATT Tuna/Dolphin decision and reaffirming the authority of the U.S. to impose trade sanctions for environmental purposes.

Fourth, it is common knowledge that the executive branch strongly resents being constrained by mandatory trade sanction legislation. The State and Commerce Departments may be more forceful in its support of U.S. accession of UNCLOS if this slows down the trend toward passage of more and more fisheries statutes with trade sanction components.

Finally, in the foreign arena, some uncommitted nations, especially those that have either been targets of U.S. sanctions in the past or view themselves as future targets, may go ahead and become parties to the Convention in order to gain access to the dispute settlement provisions for protective purposes.

Conclusion

If the United States accedes to UNCLOS, the days will be over in which it can embargo the fisheries products of other State Parties confident in the fact that the other nation will comply because they have no effective judicial remedy. This, in turn, will significantly affect the political dynamics of the domestic debate over the Convention and may derail U.S. ratification.

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U.S. House of Representatives
Committee on
Merchant Marine and Fisheries
Room 1334, Longworth House Office Building
Washington, DC 20515-6230

April 21, 1994

BACKGROUND MEMORANDUM

TO: Members, Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf

FROM: Subcommittee Staff

SUBJECT: The Law of the Sea Treaty and Reauthorization of the Deep Seabed Hard Mineral Resources Act

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On Tuesday, April 26, 1994, at 2:00 PM in 1334 Longworth House Office Building, the Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf will meet to receive testimony on the Law of the Sea Treaty and reauthorization of the Deep Seabed Hard Mineral Resources Act. Witnesses will include representatives from the Department of State, the National Oceanic and Atmospheric Administration, the Department of the Navy, the U.S. Air Force Academy's Department of Law, Old Dominion University's Department of Oceanography, the ocean mining industry, and the environmental community.

BACKGROUND

Deep Seabed Mining

Manganese nodules are irregular, fist-sized masses of manganese and iron minerals that accumulate on the bottom of several of the world's oceans and lakes. These nodules were first discovered during an 1873 oceanographic voyage but were not viewed as a potential mineral resource until the late 1950s. Though many elements have been identified in the nodules, only nickel, copper, cobalt, and manganese are considered to be of strategic and economic importance. Although nodules occur on a world-wide basis, commercial interest has focused primarily on the sea floor of the east-central Pacific Ocean.

Manganese nodules have never been exploited commercially, primarily because the potential return has never been competitive with that from other sources of minerals. Metal markets currently are depressed as a result of recent discoveries of additional land-based sources of minerals, improvements in the efficiency of land mining practices, and dumping of large quantities of these metals by former Communist Bloc nations.

Demand for nickel constitutes the primary reason why industry is interested in deep seabed mining. Given that world demand for nickel is rising at 2 to 3 percent annually, deep seabed mining is expected to be competitive with land-based mining by 2005.

The Law of the Sea Treaty

The Third United Nations Conference on the Law of the Sea attempted to address exploitation of the deep seabed as well as other ocean issues such as fisheries management, navigation rights, and environmental protection. The opening session of the Conference was held in Caracas during the summer of 1974, and the Law of the Sea (LOS) Treaty was opened for signature in Jamaica on December 10, 1982. The LOS Treaty will enter into force on November 16, 1994, one year from the date that the 60th nation, Guyana, ratified the Treaty.

U.S. Objections

Throughout Treaty negotiations, the United States has maintained that the Treaty's provisions related to navigation rights, fisheries management, and environmental protection are fairly balanced and consistent with U.S. interests and customary international law. However, the United States and most other industrialized nations have had fundamental objections related to Part XI of the Convention, which contains the deep seabed mining provisions.

U.S. objections to Part XI focused on several issues, reflecting U.S. roles as an investor in seabed mining, a minor producer of some minerals found on the seabed, and a consumer of these minerals. Objections focused primarily on the Treaty's 1) lack of certainty with regard to the granting of mining contracts; 2) mandatory technology transfer requirements; 3) complex and burdensome profit-sharing/ royalty system; 4) creation of an international seabed mining operator, to be financed by the industrialized nations, that would enjoy unfair competitive advantages over other operators; 5) unbalanced decision-making process denying the United States adequate influence; 6) obligation to survey two sites and transfer one to the U.N. mining authority; and 7) provision regarding a review conference, to be convened 15 years after mining begins, which could bind the United States without its consent.

The Boat Paper

U.S. negotiators made a concerted effort to address these objections prior to the official opening of the Treaty for signature, but in 1982 decided not to sign the Convention due to continued difficulties concerning Part XI. In the early 1990s, when it became

apparent that few industrialized countries had ratified the LOS Treaty because of reservations to Part XI, U.N. Secretary Perez de Cuellar convened several meetings to determine the prospects for resolving objections to the Treaty's seabed mining provisions. In 1993, the United States took part in an informal series of discussions with ten other countries[1] to develop an overall plan to amend Part XI. A consensus document known as the "Boat Paper" was released by the 11 nations in August 1993, with the hope that it would serve as the basis for further negotiations on Part XI.

By focusing on a market-oriented approach, the Boat Paper proposed to make the seabed mining regime more friendly to those countries possessing major economic interests in seabed mining. The Boat Paper's proposals focused on reducing costs to participating nations and placing less emphasis on protecting the interests of developing countries. The document suggested reconstituting the Council, the main decision-making body of the international mining regime, and instituting chambered voting to give large investors, consumers, and exporters a larger voice in decisions. Finally, the Boat Paper proposed weakening the Enterprise, the LOS Treaty's direct mining arm. Although never recognized formally, the Boat Paper has served as a de facto focus for discussions.

Recent Negotiations

Continuing discussions during November 1993 among the United States and other nations served to resolve several issues of concern to the seabed mining industry. Among other items, the nations agreed to eliminate the $1 million annual fee which was to be paid by the miner from the date of approval of an exploration or commercial development plan. Negotiators instead identified broad principles upon which fees would be based in the future when mining becomes commercially feasible.

In addition, because the annual fee has been suspended, there will be a diligence requirement included to ensure that miners do not lock up large tracks of the seabed. The basis for this provision is the U.S. Deep Seabed Hard Mineral Resources Act (see below), under which a miner has ten years to begin commercial operations after beginning exploratory work. Under the revised Part XI procedures, this time period can be renewed for five-year periods, with mandatory renewal if circumstances beyond the control of the miner prevent completion of an approved work plan, or if market conditions do not support beginning commercial production.

Third, the $500,000 application fee for exploration and production has been split, such that half is due when an exploratory plan of work is approved and half when the production plan is approved. In addition, the requirement that each miner reserve one equivalent site for use by the Enterprise has been weakened, although not eliminated, to provide for joint ventures between the original

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[1]Great Britain, Italy, Australia, Fiji, Indonesia, Brazil, Nigeria, Jamaica, Tanzania, and Argentina.

site owner and the Enterprise, and reversion of the site back to its original owner if the Enterprise does not decide to develop the site within ten years. Finally, the mandatory technology transfer provision was weakened, to clarify that LOS Treaty parties and miners are only being asked to "facilitate" information sharing and that intellectual property rights are explicitly protected.

Negotiations on Part XI have continued since November 1993, as there is considerable pressure to resolve the Part XI controversies to allow the United States and other industrialized nations to ratify the LOS Treaty. Remaining unresolved issues primarily concern the decision-making process and the authority of less developed nations to veto decisions on the same basis as industrialized nations. The State Department has been meeting informally with the U.S. ocean miners, who maintain that the entire mining regime outlined in Part XI does not create an environment conducive to investment in ocean mining. However, many of the issues cited by the miners, including application fees, priority of right, competition with the Enterprise, and mandatory technology transfer, have been resolved in a manner which benefits the ocean mining industry.

Navigational and National Security Issues

The Treaty's provisions related to freedom of navigation and overflight generally are seen as a positive clarification of countries' mobility rights. The LOS Treaty provides assurance that key sea and air lines of communication will remain open as a matter of legal right, not dependent upon approval by coastal and island nations along the route or in the area of operations.

For this reason, the Treaty is viewed by many U.S. representatives as vital to U.S. national security interests. LOS Treaty provisions securing the right of innocent passage, the right of transit passage, archipelagic sea lanes passage, high seas freedoms, and maritime claims related to the territorial sea and the exclusive economic zone are seen as the Treaty's primary contributions toward national security. It should be noted that the executive orders issued by former President Reagan extending the exclusive economic zone of the United States to 200 nautical miles and the territorial sea of the United States to 12 nautical miles (issued on March 10, 1983, and December 27, 1988, respectively) are consistent with LOS Treaty provisions.

The Deep Seabed Hard Mineral Resources Act

The failure of the LOS Treaty negotiations during the 1970s to develop an acceptable international legal regime governing deep seabed mining highlighted the need for domestic legislation addressing the issue. In 1980, Congress enacted the Deep Seabed Hard Mineral Resources Act (DSHMRA) (P.L. 96-283), intended to be an interim measure to protect U.S. access to seabed minerals and provide greater certainty to U.S. mining companies interested in deep seabed mining. Many U.S. representatives believed that domestic legislation would underscore U.S. determination to pursue deep seabed mining, convince LOS Treaty negotiators to move toward a more reasonable regime,

provide an alternative to the LOS Treaty should negotiations break down or produce an unacceptable text, and/or secure access to seabed minerals, thus easing U.S. dependence on imported strategic materials.

NOAA's Role

The National Oceanic and Atmospheric Administration (NOAA) regulates deep seabed mining under DSHMRA and is responsible for issuing and monitoring permits and licenses to U.S. citizens for the exploration and commercial recovery of certain hard minerals (nickel, copper, cobalt, and manganese) beyond the U.S. continental shelf. There are four permits currently issued to three U.S. mining consortia. (These permits will expire in 1999.)

The Act incorporates mineral conservation and environmental protection as integral elements of the seabed mining process, requiring NOAA to conduct a continuing program of ocean research to support environmental assessment through the period of exploration and commercial recovery. DSHMRA also authorizes NOAA, in conjunction with the State Department, to negotiate agreements with countries that have filed seabed mining claims which overlap U.S. sites. (One country has recently filed such a claim.) Finally, DSHMRA authorizes NOAA, in consultation with the Secretary of State, to designate as reciprocating states those foreign nations with compatible processes for licenses and permits.

Appropriations for DSHMRA totaled $1.6 million in FY 1993 and $1.81 million in FY 1994. However, the House appropriations report for FY 94 suggests that NOAA eliminate the deep seabed mining program as a budget-cutting measure. NOAA will be proposing to reprogram $200,000 from the program this year. No funds are requested in the FY 1995 NOAA budget.

DSHMRA Reauthorization

DSHMRA expires on September 30, 1994. Many U.S. government and industry representatives view the Act as critical to protecting the U.S. mining industry's security of tenure and international operations when seabed mining becomes commercially feasible. Also, the Act is seen as an important factor in supporting U.S. interests as the United States continues to assess the national and international implications of the LOS Treaty. Moreover, the Act is seen as a significant factor in changing attitudes toward Part XI, as it has provided a responsible system for U.S. deep seabed exploration and mining.

Representatives of the U.S. mining consortia support DSHMRA reauthorization to (1) protect the $2 billion investment of three U.S. companies licensed under the Act; (2) provide an alternative to the U.N. legal regime for ocean mining; (3) continue the environmental studies work already begun, so the information will be available when commercial mining of ocean minerals becomes viable; (4) prevent the loss of seabed mining technology to foreign countries, which could hurt U.S. access to nationally strategic seabed minerals in the future; and (5) take advantage of potential jobs and expanded markets the seabed mining industry may create.

Environmental Protection and Research Issues

NOAA began sponsoring research into the potential environmental effects of deep ocean mining in 1972. The Deep Ocean Mining Environmental Studies (DOMES) project, which NOAA conducted from 1975 through 1980, concentrated on the short-term biological and physical-chemical effects of deep ocean mining.

NOAA published a programmatic environmental impact statement (PEIS) in 1981, which indicated that the environmental effects of deep seabed mining were minimal when compared to the effects of open-pit mining in the tropics, where new land mines most likely would be located. The PEIS indicated that because mining will occur in a very small percentage of the total ocean region, effects related to the smothering of benthic organisms lying in the tracks of the manganese nodule collector would be insignificant.

The most significant environmental issue remaining relates to the effects of the "benthic plume" created by the nodule collector. The plume potentially may entomb benthic fauna in the region of the mine site, and fine sedimentary particles from the plume may be carried via bottom currents many kilometers from the site, eventually settling and diluting the food supply of organisms found in distant regions. It is thus conceivable that the environmental impacts of deep seabed mining could be significant, given that benthic organisms are unaccustomed to such disturbances. However, the impacts of the nodule collector on the benthic fauna, as well as the effects of the benthic plume on the food supply and respiratory surfaces of filter feeders and the microlayer of organisms living on nodules, remain unclear.

It is hoped that NOAA's multi-year Benthic Impact Experiment (BIE), which began in June 1991, will provide more complete information regarding the impacts of the nodule collector and the resulting benthic plume. The experiment involves simulating the mining of manganese modules by blanketing a 1-2 square kilometer area of the seafloor with sediments. It is thought that the response of benthic organisms to varying levels of sediment burial will be indicative of the impacts associated with commercial mining. Hence, this experiment is seen as a means to determine whether animal entombment and/or animal starvation actually occur as a result of sediment deposition.

NOAA, in an effort to better utilize limited resources, has sought international cooperation to address the environmental issues associated with deep seabed mining. NOAA has reached an agreement with Russia's Yuzhmorgeologiya Institute regarding the exchange of scientists and coordinated at-sea research. Russia has contributed valuable ship time, long baseline acoustic navigation, and equipment to the initial BIE experiment, and plans to conduct a BIE in its own mining claim area in 1995. NOAA and the Metal Mining Agency of Japan have reached a similar agreement regarding cooperation on environmental research related to deep seabed mining, and this year Japan plans to conduct a BIE in its western mining claim area. Other countries also have expressed interest in conducting BIE studies in their mining claim areas in cooperation with NOAA.

ISSUES

1. Would U.S. ratification of the LOS Treaty necessitate amending DSHMRA? What amendments would be required?

2. What type of implementing legislation would U.S. ratification of the LOS Treaty entail?

3. Is current environmental research on deep seabed mining addressing the highest priorities? Will it provide the information NOAA needs for future regulatory decisions?

4. Is the current level of funding for environmental impacts research adequate?

5. If DSHMRA is not reauthorized, will current environmental research efforts be completed? Will the information already collected be lost?

6. If the Act is not reauthorized, what happens to the licenses already issued to U.S. citizens?

7. How will overlapping mining claims, such as the recently-filed Korean claim, be resolved if DSHMRA is not reauthorized?

8. If the United States signs the LOS Treaty, will the U.S. mining industry abandon its ventures? Can the United States be party to the Treaty without the support of U.S. industry?

9. Can U.S. industry successfully mine international seabeds without the protection of the U.S. government?

10. How important will it be for the United States to have access to alternative sources of copper, nickel, cobalt, and manganese in the future?

11. What economic, technological, and political factors need to be in place for deep seabed mining to become a viable commercial activity? How soon might deep seabed mining become commercially viable?

12. What minimum conditions are necessary for industry to become a viable part of a deep seabed mining regime under the LOS Treaty?

United States Department of State

Washington, D.C. 20520

May 23, 1994

Dear Mr. Chairman:

Following the April 19, 1994 hearing at which Ambassador David Colson testified, additional questions were submitted for the record. Please find enclosed the responses to those questions.

If we can be of further assistance to you, please do not hesitate to contact us.

Sincerely,

Wendy R. Sherman
Assistant Secretary
Legislative Affairs

Enclosures:
As stated.

The Honorable
Solomon P. Ortiz, Chairman,
Subcommittee on Oceanography, Gulf of Mexico,
and the Outer Continental Shelf,
Committee on Merchant Marine and Fisheries,
House of Representatives.

Questions for the Record Submitted to
Ambassador David A. Colson
by Hon. Jack Fields re
Law of the Sea Treaty and Deep Seabed
Hard Mineral Resources Act

Question 1:

The seabed mining community has long voiced fundamental difficulties with the seabed mining regime continued in Part XI of the Law of the Sea Treaty. Why has the United Sates continued to support the basic framework of the regime, rather than adopt a regime more like one which has been successful for the United States -- the Deep Seabed Hard Mineral Resources Act?

Answer:

It has been the position of all U.S. administrations since negotiations began on the Law of the Sea Convention in 1973, that our oceans interests would be best served by a universally accepted Convention. A Convention acceptable to us would offer a legal framework within which we could pursue and protect our oceans interests with greater predictability and at less political and economic cost than through unilateral action or other alternatives. This position applies to Part XI as it does to the other parts of the Convention. It is also reflected in the Deep Seabed Hard Minerals Resources Act which establishes a domestic legal regime for seabed mining pending entry into force for the U.S. of an acceptable international regime established by Treaty. The Act specifically emphasizes the need to achieve a widely acceptable treaty on the law of the sea including with respect to seabed mining.

Question 2:

What other Federal agencies have been involved in the informal negotiations on Part XI of the Law of the Sea Treaty? Has the State Department involved any outside groups?

Answer:

The State Department has coordinated our policy with respect to the U.N. consultations on reform of the Convention's seabed mining provisions with all U.S. Government agencies with an interest in oceans policy, including State, DOD, Treasury, Commerce, Transportation, Justice, USTR, OMB and the NSC. U.S. delegations to the consultations have been composed of officials of the State and Commerce (NOAA) Departments, the two agencies designated under the Deep Seabed Hard Minerals Resources Act with primary responsibility for its implementation.

The Departments of State and Commerce have consulted with representatives of the U.S.-licensed seabed mining consortia on a regular basis since the initiation of consultations in 1990. These consultations have included in depth discussions of all of the issues under consideration in the talks. We have also consulted on an informal basis with representatives of the environmental NGO's.

Question 3:

Do the sections governing fishing and maritime research in the Law of the Sea Treaty represent any changes to existing law?

Answer:

Our preliminary analysis indicates that most relevant U.S. laws, including those regarding fishing and maritime research, are generally consistent with the provisions of the Convention.

In anticipation of the successful conclusion of the efforts to revise the Convention's seabed mining regime, the Administration has begun a thorough review of the Convention as a whole to determine, in the event that the United States were to accede to the Convention and ratify the implementing agreement, the nature and extent of implementing legislation that may be necessary or desirable.

Question 4:

One of the recent commentators on the Law of the Sea Treaty, Doug Bandow of the Cato Institute, argues that the boundary setting process strips resources from the United States, that the maritime pollution provisions will restrict the U.S.' ability to control some emission sources, and that the U.S. may have to share oil revenues from the development of our outer continental shelf. Can you respond to these assertions?

Answer:

It was our view in 1982 and remains our view that the LOS Convention's provisions on the continental shelf satisfy U.S. interests. The provisions of Article 76 for delimiting the outer edge of the continental margin, while complex, replace the more ambiguous "exploitability" criterion of the 1958 Convention on the Continental Shelf. They provide the basis for establishing with clarity and precision U.S. jurisdiction over the full extent of our geological continental margin. Modest revenue sharing provisions for areas of the outer continental shelf (beyond 200 nautical miles from the coast) were part of the package necessary to achieve this result. Any potential loss of revenue to the U.S. Government from oil revenues is judged to be more than offset by establishment of unambiguous U.S. jurisdiction over the hydrocarbon potential of the full extent of the continental margin.

Mr. Bandow's point on marine pollution is not clear to us. However, it is our assessment that the Convention's provisions, primarily Part XII, serve U.S. interests in the protection of the marine environment. They are generally consistent with U.S. law and policy and do not, in our view, restrict our ability to control sources of marine pollution in the United States.

Question 5:

Regarding the marine pollution provisions in the Law of the Sea Treaty, what does the Treaty give us that we do not have under MARPOL and the London Convention? Is there any risk of preempting more stringent Federal or State laws on marine pollution if the U.S. should ratify the Treaty?

Answer:

The marine pollution provisions of the treaty cover more than vessel source pollution and ocean dumping. For example, there are provisions on pollution from land-based sources, seabed activities, and the atmosphere. There are also provisions on international cooperation, introduction of alien species, notification, pollution contingency plans, research, technical assistance, monitoring and assessment, to name a few. Finally, there are detailed provisions on enforcement.

On the issues of ocean dumping specifically, the Treaty goes beyond the London Convention. For example, the Treaty requires all Parties to adopt national laws, regulations, and measures that are no less effective in preventing, reducing and controlling such pollution than the global rules and standards, whether or not they are a party to the London Convention. The Treaty also contains more explicit enforcement provisions than does the London Convention.

With respect to vessel source pollution, the Treaty requires the Parties to cooperate internationally in developing international rules and standards, whether or not they are parties to MARPOL. It further requires Parties to adopt laws and regulations for vessels flying their flag that at least have the same effect as that of generally accepted rules and standards established through the competent international organization (i.e., the IMO) or general diplomatic conference, whether or not they are parties to MARPOL. It also contains provisions on port state and coastal state authority to curb vessel source pollution and establishes procedures for coastal States, under certain special circumstances, to adopt more stringent measures than the international rules and standards. Finally, it contains more explicit enforcement provisions than does MARPOL.

As to the issue of pre-emption, the general approach of the Treaty in the area of marine pollution is to require all States to bring their national laws up to international rules and standards. The Treaty does not have a clause precluding States from taking more stringent measures than international standards. Indeed, in the case of vessel source pollution, the Treaty sets forth specific procedures for the adoption of mandatory measures in certain special circumstances. However, all measures taken by Parties must be consistent with all Parts of the Convention.

The marine pollution provisions of the Convention are generally consistent with U.S. law and policy. However, the issue of whether any specific law needs to be changed (or could be changed to enhance U.S. implementation of the Treaty) is currently under review.

Question 6:

Has any country, which has a government or private business entity with an ocean mining program, ratified the Law of the Sea Treaty? For that matter, has any industrialized country ratified the Treaty? Are you expecting any industrialized country to ratify the Treaty absent U.S. ratification?

Answer:

No major industrialized country has ratified the Convention. They have, however, actively participated in and supported the U.N. Secretary General's consultations. Preliminary indications are that most are satisfied with the progress on the draft agreement on seabed mining. None have yet taken final decisions on the draft agreement or the Convention, but our assessment is that many are likely to become parties to both if the present text of the seabed mining agreement is adopted largely intact. There is no indication that any intend to wait for U.S. ratification to be completed before making their own decisions.

Question 7:

Does Part XI of the Law of the Sea Treaty, as amended by the Boat Paper, still impose a training requirement for the employees of the Enterprise by its competitors, the seabed mining licensees? If so, how would you envision the U.S. complying with this provision? Would this involve a type of mandatory technology transfer?

Answer:

Part XI of the Convention, as amended by the draft agreement, does not impose specific training obligations, either on commercial entities applying for mining rights or the governments that sponsor their applications. It does provide general authority for the establishment of training programs that would involve participation of governments and the commercial entities they sponsor; however; such programs would have to be established by agreement within the Council which could not be achieved over the objection of the U.S. and two other industrialized States.

The draft agreement would eliminate the mandatory technology transfer provisions in the Convention and we would not agree to their reintroduction through the guise of training or technical assistance.

Question 8:

Part XI of the Treaty and the Boat Paper will require substantial contributions by the United States Government to fund the Seabed Authority created by the Treaty. What will be the cost to the United States to support the Authority? What percentage of the total budget of the Authority will be borne by the U.S.? What will be the contributions by U.S. miners who receive exploration and exploitation contracts from the Authority? And what will all these funds be used for?

Answer:

Because of our need to replace the existing seabed mining provisions of Part XI upon the entry into force of the Convention, the draft agreement provides for its provisional application from the date of the entry into force of the Convention until the agreement enters into force. During that period the seabed Authority will be funded out of the general U.N. budget. A specific budget proposal will have to be discussed and agreed upon when the International Seabed Authority meets after the Convention enters into force. It will be taken up first in a Finance Committee (U.S. is entitled to be a member) which must make its recommendations by consensus to the Council of the Authority. The Authority's proposal will then have to be considered in the normal U.N. budget process. Very rough secretariat estimates suggest a total budget of approximately 3.5 million dollars per year. The U.S. contribution could be expected to be approximately 1/4.

More broadly, the draft agreement provides a basis for limiting the costs of the Authority, especially during the period before seabed mining becomes feasible.

QUESTIONS SUBMITTED BY THE
HON. SOLOMON ORTIZ

Question 1:

If the U.S. signs the Treaty, is it expected that other industrialized nations will sign on as well, or will the U.S. be alone in acceding to the provisions of the Treaty?

Answer:

Except for the United States, the United Kingdom and Germany, virtually all industrialized nations have already signed the 1982 United Nations Convention on the Law of the Sea. These nations have not yet ratified the Convention, however, because they share the objections of the United States to the Convention's deep seabed mining regime. The Convention is no longer open to signature; the U.S., U.K. and Germany may only express their consent to be bound by acceding to the Convention.

While these nations' consent to be bound by the Convention will depend, as it does in the United States, on approval by their respective parliamentary bodies, each has indicated general satisfaction with the progress that has been made to revise the Convention's seabed mining regime. On this basis, the Administration believes that the adoption of the agreement to amend that regime will mean that Convention and implementing agreement will become widely accepted, by developing and industrialized nations alike.

Question 2:

What type of amendments might be required to DSHMRA if the U.S. were to ratify the Law of the Sea Treaty:

Answer:

If the United States were to ratify the LOS Convention as amended by an agreement relating to the implementation of Part XI similar to the draft text now under consideration, our preliminary assessment is that limited amendment of the DSHMRA might be desirable at about the same time to assure two long term objectives. The first is that the United States have clear authority, and sufficient flexibility, to carry out its obligations as a Party and a potential sponsoring State for U.S. entities which wish to conduct deep seabed mining activities; the second is to define more clearly the relationship between the Federal government and entities applying for, or holding, authorizations from the International Seabed Authority ("Authority") in order to facilitate smooth operation and adequate representation of the interests of U.S. entities in relation to the Authority.

While many of the substantive elements of a potential international regime are expected to be similar to those under the DSHMRA, further detailed consideration of the relationship of the statute to the Convention is clearly necessary and will become more focussed as State members of the Authority begin to address the details of organization of the international regime and its specific requirements at some time in the future. Although statutory interpretation and revision of regulations, consistent with the

purposes and objectives of the DSHMRA, may be sufficient to address many of these issues, others may require amendment of the DSHMRA.

Question 3:

What type of implementing legislation would U.S. ratification of the Law of the Sea Treaty entail?

Answer:

In anticipation of the successful conclusion of the efforts to revise the Convention's seabed mining regime, the Administration is beginning a thorough review of the Convention as a whole to determine, in the event that the United States were to accede to the Convention and ratify the implementing agreement, the nature and extent of implementing legislation that may be necessary or desirable.

Our preliminary analysis indicates that most relevant U.S. laws are generally consistent with the provisions of the Convention.

Question 4:

How important will it be for the United States to have access to alternative sources of copper, nickel, cobalt, and manganese in the future?

Answer:

The specific nature of our strategic materials needs in the future cannot be predicted with certainty. These needs will be affected by changes in our economy and as well as in external political and economic circumstances. Further advances in technology are also likely to affect the demand for materials and our ability to use new sources. What we can say is that it is important for the U.S. to have access to all strategic materials including the four which have been associated with seabed mining to date -- copper, nickel, cobalt, and manganese -- and that we must preserve this access for the future.

Question 5:

What economic technological and political factors need to be in place for deep seabed mining to become commercially viable?

Answer:

Ultimately commercial seabed mining will turn on the assessment of commercial bankers and/or private investors of the economic, technological and political risks of seabed mining. Those risks will have to be considered along with the potential return on investment and then compared to an analysis of potential alternative investments either in land-based mining or seabed mining in areas under national jurisdiction, or other potential investments available to those actors.

Economic risks relate to the assessment of the resource base, metals prices and the costs of production at the time production will begin. Technological risks relate largely to the effectiveness, reliability and efficiency of a particular technology. Political risks are a function of the legal basis on which the activity is undertaken and the extent to which claims to exclusive rights to develop a mine site are recognized by those actors which are in a position to challenge them. In addition, political risks relate to the reliability and predictablity of the institution which administers the mining regime.

Assessment of these risks against the potential return on investment is a very complex process and may be highly individualistic with respect to particular economic actors.

For example, some companies have shown themselves to be very creative in managing political risks. Others with a more conservative corporate culture may be willing to tolerate very little risk regardless of the projected returns.

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

The Honorable Solomon P. Ortiz
Chairman, Subcommittee on Oceanography,
Gulf of Mexico, and the Outer Continental Shelf
Committee on Merchant Marine and Fisheries
House of Representatives
Washington, D.C. 20515-6230

Dear Mr. Chairman:

Enclosed are the National Oceanic and Atmospheric Administration's responses to questions received from the Subcommittee as a follow-up to its April 26, 1994, hearing concerning the Deep Seabed Hard Mineral Resources Act and the Law of the Sea Treaty.

Please do not hesitate to call on me should you require additional information.

Sincerely,

Sally Yozell

Sally Yozell
Director
Congressional Affairs

Enclosure

FOLLOW-UP QUESTIONS FOR DR. DAVID EVANS
BEFORE THE SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES
APRIL 26, 1994

Questions from Congressman Ortiz

Question 1:
You note in your testimony that the Administration has not requested funds for NOAA to carry out its deep seabed mining responsibilities. What effect will this have on the research being conducted? Will it be completed?

Answer:

The National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service (NOS) is currently organizing an in-depth scientific review of its deep seabed mining environmental research, including the Benthic Impact Experiment (BIE). The review will be conducted this summer by a six to eight member panel of well known marine scientists and will include representation from the environmental community. The future direction of the deep seabed mining environmental research and the completion of the BIE will take account of the panel's recommendations.

Question 2:
Why has the research on deep seabed mining been conducted through the National Ocean Service when NOAA has an Undersea Research Program which provides access to the entire academic community and a much-needed peer review system?

Answer:

The Ocean Minerals and Energy Division (OMED) of the NOS is responsible for carrying out NOAA's statutory responsibilities established by the Deep Seabed Hard Mineral Resources Act (DSHMRA). This is primarily a licensing, permitting and regulatory program with a strong mandate to perform environmental research which will permit key decisions to be made in an informed manner with due regard for the environment. Thus, OMED's research program is a rather directed one of applied research to support its mandated regulatory decisions.

The mission of the NOAA Undersea Research Program (NURP), meanwhile, is to provide scientists with access to manned undersea facilities, manned submersibles and remotely operated vehicles (ROV) to further their scientific research. Basic support for the research being performed by these scientists

generally comes from other sources. Thus, NURP's focus is on the applicability of undersea systems and ROVs to oceanic research.

With respect to peer reviews, NOAA has regularly sought scientific peer reviews and constructive advice from academia, industry, environmental interest groups and other concerned groups and agencies for its deep seabed mining environmental research.

Question 3:
How much of the budget for the deep seabed mining program has been devoted to research?

Answer:
The amount varies from year to year depending on the phase of the research the program is in. Over the past four years, the Ocean Minerals and Energy Division has spent on environmental research from sixty-five to seventy-five percent of the funds it received. Of the balance, about fifteen percent goes to licensing related activities, with the remainder divided among Law of the Sea support, tracking ocean thermal energy conversion developments and other general and support activities.

Question 4:
If DSHMRA is not reauthorized, will current environmental research efforts be completed? Will the information already collected still be useful?

Answer:
Given the current budget pressures in NOAA and NOS, it is unlikely that the environmental research efforts, as currently planned, will be completed if DSHMRA is not reauthorized. As previously noted, NOAA and NOS are planning to process as much of the data as possible and then preserve samples, to the maximum extent possible, so the research can be resumed at a future date if this appears necessary.

The information already collected will be of some use in the beginning to determine the biodiversity of bottom dwelling organisms (benthos) in the mining province.

Question 5:
You suggest in your testimony that U.S. ratification of the Law of the Sea Treaty could necessitate amending DSHMRA in the long-term, but that no changes would be required in the short-term. What amendments would be required? What potential modifications do you foresee as being necessary in the long-term?

Answer:
As the testimony indicated, the Administration believes that it will probably not be necessary to seek amendments to DSHMRA in

the short term, i.e., during any period in which the United States may provisionally apply the Draft Agreement Relating to the Implementation of Part XI of the 1982 United Nations Convention on the Law of the Sea.

However, in the longer term, the United States might have to redefine its relationships with the current licensees. Currently under DSHMRA, NOAA issues Licenses for Exploration, Permits for Commercial Recovery and serves as the regulator of deep seabed mining, with primary emphasis on environmental protection. Under the modified UNCLOS, the relationship of the U.S. Government (USG) with the U.S.-based deep seabed miners would change. For example, the United States would be the "sponsoring state" for U.S.-based deep seabed miners and would have to certify them, in terms of qualifications, previous activities, and so forth, to the United Nations International Seabed Authority when they seek the approval of work plans for exploration or commercial recovery. Similarly, the USG may no longer be solely responsible for monitoring operations for potential adverse environmental effects, but could retain some monitoring or enforcement responsibilities as a "sponsoring state." There are a variety of policy issues which must be reviewed before specific recommendations can be made.

Question 6:
What type of implementing legislation would U.S. ratification of the Law of the Sea Treaty entail?

Answer:
In anticipation of the successful conclusion of the efforts to revise the Convention's seabed mining regime, the Administration has begun a thorough review of the Convention as a whole to determine, in the event that the United States were to accede to the Convention, the nature and extent of implementing legislation that may be necessary.

Our preliminary analysis indicates that most relevant U.S. laws appear to be fully consistent with the provisions of the Convention.

Question 7:
If the DSHMRA is not reauthorized, what happens to the licenses already issued to U.S. citizens?

Answer:
The licenses will remain in force because only the authorization for appropriations is expiring, not the statute itself. NOAA plans to use existing resources to service the licensees, such as for reviewing their annual reports for diligence and for participating in the consultations on the United Nations Convention on the Law of the Sea.

Question 8:
To your knowledge, how seriously have NOAA and/or ocean mining companies considered exploring areas other than the Clarion-Clipperton Fracture Zone for potential mining activities?

Answer:
NOAA has not considered potential mining activities in other areas other than trying to maintain a general knowledge of domestic and foreign interests. For example, it is known that at least one licensee looked carefully at manganese nodules on Blake Plateau, which is off the coast of the southeastern United States and within the U.S. Exclusive Economic Zone (EEZ). These nodules are of a lower grade and more difficult to process than nodules from the Clarion-Clipperton Fracture Zone (CCFZ).

NOAA has no direct knowledge of other interests of the licensees outside of the CCFZ, but it is known that there are nodule deposits of potential commercial value in the EEZs of several Pacific Island nations. Such deposits could become of interest to the U.S.-based consortia.

Questions from Congressman Fields

Question 1:
The United States entered into reciprocating states agreements with the United Kingdom, France, Germany, and other potential seabed mining competitors, under the auspices of the Deep Seabed Hard Mineral Resources Act. Is there any reason why the U.S. could not continue operating internationally under such agreements, even after the Law of the Sea Treaty has come into force?

Answer: While the "reciprocating states regime" does provide an alternative to operating in the absence of a broadly acceptable United Nations Convention on the Law of the Sea, it remains a reasonably viable option only as long as other major potential deep seabed mining nations do not ratify or accede to UNCLOS. At the present time, other potential seabed mining nations appear to be generally satisfied with the progress that has been made to revise the Convention's deep seabed mining provisions. If several of them were to agree to the modified Convention, the continued viability of the reciprocating states regime could be questionable.

If major potential deep seabed mining nations continue to stay out of UNCLOS, then it is assumed that they would continue their activities under the reciprocating states regime regardless of the status of UNCLOS. However, it is quite questionable if all major mining nations will stay out of the modified international regime.

Question 2:
NOAA received an appropriation of approximately $1.5 million for its ocean minerals program in FY '94. How were these funds distributed? How much went to licensing and reciprocating states agreements oversight? Environmental studies? What is the minimum amount of funds needed for NOAA to continue licensing and reciprocating states agreement oversight and undertake meaningful environmental impact studies?

Answer: Over the past four years, the Ocean Minerals and Energy Division has spent on environmental research from sixty-five to seventy-five percent of the funds it received. Of the balance, about fifteen percent goes to licensing related activities, with the remainder divided among Law of the Sea support, tracking ocean thermal energy conversion developments and other general and support activities. This basic pattern has continued in FY '94, with about twenty percent of the funds going to licensing related activities and about sixty-six percent going to environmental research.

NOAA and NOS plan to use base resources to continue processing the license application from the Ocean Minerals Company and to provide essential services to the existing licensees during FY '95. A special scientific panel will be reviewing the environmental impact research this summer and making recommendations to NOAA and NOS on the future of this aspect of the program.

Question 3:
There are three outstanding exploration licenses which have been issued under the Deep Seabed Hard Mineral Resources Act; these licenses expire in 1999. How will failure to reauthorize the Act affect these licenses? How will failure to reauthorize the Act affect the application which is pending for a fourth license? How will failure to reauthorize the Act affect the reciprocating states agreements the U.S. has entered into?

Answer: The only provision of DSHMRA which is expiring is the authorization for appropriations. All of its other provisions remain in force. Thus, according to NOAA's Office of the General Counsel, a failure to reauthorize DSHMRA will not affect the three existing licenses, the regulations under which the license application from the Ocean Minerals Company (OMCO) is being processed or the reciprocating states' designation. With respect to the OMCO application, NOAA and NOS plan to continue processing it using base resources during FY '95.

Question 4:
This subcommittee and the Congress has charged NOAA with many responsibilities over the years. For example, in 1992, we directed NOAA to install new tidal gauges and other instruments in the Houston Ship Channel. NOAA failed to do so, citing lack of funds. What guarantee do we have that NOAA will continue its functions under the Deep Seabed Hard Mineral Resources Act if we do not reauthorize the Act and provide funding?

Answer: NOAA and NOS plan to make a "best effort" to continue services to those who hold licenses issued pursuant to provisions of the Deep Seabed Hard Mineral Resources Act and to continue processing the license application from the Ocean Minerals Company.

Question 5:
As you note in your testimony, one of the primary reasons for the enactment of the Deep Seabed Hard Mineral Resources Act was to provide a U.S. negotiating base for the Law of the Sea Treaty talks. By failing to reauthorize the Act at this delicate time during the negotiations, which truly hinge on developing an acceptable seabed mining regime, what type of signal is the U.S. sending to the international community?

Answer: It is difficult to predict the reaction of the international community. However, given the advanced stage of the consultations being held by the Secretary-General of the United Nations and given that a failure to reauthorize appropriations under the Deep Seabed Hard Mineral Resources Act does not affect, according to the National Oceanic and Atmospheric Administration's Office of the General Counsel, the status of U.S. licenses, there may be no significant effects.

Question 6:
During the workshop sponsored by NOAA on the reauthorization of the Deep Seabed Hard Minerals Resources Act, several participants voiced criticisms about the conduct of NOAA's seabed mining impact studies. These criticisms are echoed in Dr. Craig Smith's testimony. How has the agency failed to respond to concerns raised by the scientific community? Would the creation of an independent review panel be appropriate or necessary to ensure the best science?

Answer:
An in-depth scientific review of NOAA's deep seabed mining environmental research, to follow up on the Workshop recommendations, is currently being planned for this summer. The review will be conducted by a panel of independent scientists drawn from academia and will include one or more scientifically-

oriented representatives of environmental interest groups. It is not believed that a more formal arrangement is needed.

Question 7:
Curiously, your testimony not once mentions the conclusions of the January workshop sponsored by NOAA on whether DSHMRA should be reauthorized (although you note criticisms about your research plan). What were the results.

Answer: It was the consensus of the participants at the January 19, 1994 Deep Seabed Mining (DSM) Workshop that funding for DSHMRA should be reauthorized. There was no consensus, however, on either the level or duration of funding.

Question 8:
The Minerals Management Service of the Department of the Interior has jurisdiction over mineral resources on the U.S. continental shelf under the Outer Continental Shelf Lands Act. Since NOAA has indicated no support for seabed mining in its FY '95 budget request, would the agency support transferring responsibility for the program to the Department of the Interior?

Answer: This option has not been considered within the National Oceanic and Atmospheric Administration or elsewhere within the Administration. However, it should be noted that the deep seabed resource in question, manganese nodules, is beyond U.S. national jurisdiction and requires a legal regime based on DSHMRA rather than the Outer Continental Shelf Lands Act (OCSLA). The "bonus bidding" type approach called for by OCSLA is not appropriate for manganese nodules.

Question 9:
How much funding has NOAA invested in the Benthic Impact Experiment so far? Several witnesses have expressed concern that NOAA will not be able to continue to participate in the experiment, especially after reprogramming funds away from the seabed mining program. Will NOAA be participating in the research cruise this summer? What are NOAA's plans to continue this work in the future?

Answer: From 1989 to 1994, NOAA has spent between $3 and $4 million on BIE. This includes salaries and pro-rata salaries in the Ocean Minerals and Energy Division, contracts and grants for external research and technical development efforts, equipment and various port and other costs associated with use of the Russian research ship the R/V YUZHMORGEOLOGIYA.

Because OMED did not receive all of the funding anticipated for FY '94, it was necessary to renegotiate costs of using the Russian ship. These negotiations were successful and NOAA will be able to conduct its research cruise, as planned, this summer.

Regarding future work, OMED had planned to return to the BIE study area annually to collect samples over the next five years. This data would then have been used to assess the impact of the simulated mining sediment redeposition on deep-sea biodiversity and community structure. An in-depth scientific review of the research is planned for this summer by NOS and after that review its future will be determined.

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Congressman Fields: A recent study on the Law of the Sea Treaty regarding transit rights notes that the Treaty imposes new limits on navigation in exclusive economic zones, territorial seas, and waters surrounding archipelagic straits. The study states "[a]t times, the Law of the Sea Treaty's language is ambiguous -- regarding transit rights for submerged submarines, for instance -- which limits the value of the Treaty guarantee." Can you comment on this?

Captain Schiff: A 1993 study, prepared under the auspices of the Cato Institute, criticized the 1982 UN Convention on the Law of the Sea. To be candid, we were not impressed at all with the study. In contrast to major ocean policy reviews the Department of Defense prepared during the 1970's, 1980's, and 1990's, that particular study was notably lacking in scholarship and accuracy. And it came to some erroneous conclusions.

The 1982 UN Law of the Sea Convention codifies both long-standing and emerging guarantees protecting freedom of navigation on the high seas, in the exclusive economic zone, in international straits, and in archipelagic sealanes. Within international straits and archipelagic sealanes, it establishes a comprehensive regime for transit passage and archipelagic sealanes passage. In acknowledging the growing number and recognition of archipelagic water claims, the Convention does impose some restrictions in archipelagic waters outside normal sealanes used for international navigation beyond the "high seas" freedoms we used to enjoy beyond 12 miles from island coastlines. Moreover, it defines more objectively the rights of coastal and maritime States concerning innocent passage in the territorial sea. On balance, however, the Convention is overwhelmingly positive in promoting the freedoms of navigation and overflight.

Since representatives of over 155 States with widely divergent interests negotiated the Convention over a period of nine years, it does contain some ambiguity. As the most notable example, in no paragraph of the Convention does it explicitly state that submarines have a right to engage in transit passage while submerged. Many States, such as China, objected strenuously to the concept of transit passage for submarines. Of course, this concept was absolutely fundamental to the United States and other major maritime States. As an acceptable compromise, Article 39(1) now states that "[s]hips and aircraft, while exercising the right of transit passage, shall . . . refrain from any activities other than those incident to their <u>normal modes</u> of continuous and expeditious

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transit . . . ." (emphasis added). Assuming that the water is sufficiently deep to navigate safely submerged, the "normal mode" for submarines is, of course, to transit submerged. It is much more safe and expeditious, not to mention far more secure. And it was the mode in which nuclear submarines have always operated.

The United States has expanded the concept of "normal mode" much further. For example, we claim that aircraft may take off and land during transit passage and that naval units in company may deploy their forces consistent with the security of the force. Moreover, we permit aircraft to overfly and submarines to navigate submerged from shoreline to shoreline. Therefore, the concept of transit passage, which was newly minted in the Convention, actually benefits greatly our global mobility interests. Without the concept, we would be severely restricted in our ability to transit over 150 international straits, of which 16 are critical, now overlapped by 12-nm territorial seas.

Under the 1958 Convention on the Territorial Sea and Contiguous Zone, submarines in the territorial sea must navigate on the surface and show their flag. And aircraft are not allowed to overfly at all absent the permission of the coastal State. Now that the accepted breadth of the territorial sea has moved from 3 to 12 nautical miles, this situation would be untenable. Fortunately, the transit passage provisions of the Convention guarantee these principles of submerged passage and overflight. Moreover, these transit rights cannot be suspended.

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Congressman Fields: In your testimony, you note several nations which have put forward restrictive interpretations of the Law of the Sea Treaty, that, for example, state that only signatories to the Treaty will be able to take advantage of its provisions. You mention Iran in your testimony, but Iran has not ratified the Treaty. Are there other nations? Are they of strategic military importance, either by size or location near militarily significant straits or archipelagic waters? Has there been any expression of support by foreign naval powers of the propositions that the navigational rights embodied in the Treaty do not represent customary international law?

Captain Schiff: In signing the Convention in 1982, Iran filed a declaration stating "that only States parties to the Law of the Sea Convention shall be entitled to benefit from the contractual rights created therein." Iran cited the right of transit passage as being only available to parties. Although Iran has not yet ratified the Convention, far more important is the fact that it controls one of the world's most vital international straits and that it continues to assert several excessive maritime claims.

Iran is the best example of this proposition, but not the only State that does so. Delegates from several other States, including Spain and China, argued a similar position. In the final session of the 1982 negotiations, Norway and Mauritius stated the view of many others that the Convention was a "package deal." Ambassador Tommy Koh, the President of the Conference between 1980 and 1982, strongly argued this position in a presentation before the Conference on 11 December 1982, the day after the Convention was opened for signature. Other countries (Indonesia during bilateral discussions and Brazil during IMO meetings) have since expressed the same sentiments. During the negotiations leading to the 1982 Convention, key members of the Chinese delegation noted that 56 States then considered freedom of transit through straits overlapped by territorial seas "unacceptable." The Chinese government recently asserted several maritime claims inconsistent with the provisions of the Convention. Moreover, within their coastal waters China has adequate military power to enforce their excessive claims.

Other States have expressed concerns as well. During Conference negotiations, Spain and Morocco argued that prior permission should apply to submerged transits and military overflights of the Strait of Gibraltar. Upon signing the Convention in 1984, Spain made several formal claims of coastal

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authority inconsistent with transit passage rights. Other States which appear to take the position that many of the key navigational provisions are not customary law include Egypt, Greece, Indonesia, Malaysia, Oman, and the Philippines. Finally, some of our allies and maritime powers, such as Canada and Japan, are not willing to accept our proposition that the Convention simply codifies customary international law. Even amongst the Major Maritime Powers (Germany, Japan, U.K., France, Russia, and the United States), there is general recognition that many States would resist granting some of the navigational rights in the Convention to States which again refuse to become Party, even after the other States concerned have worked with us to resolve our stated concerns to Part XI.

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QUESTION NUMBER 3

Congressman Fields: The Law of the Sea Treaty grants transit rights through international straits. How many international straits are truly strategic?

Captain Schiff: Although there are about 153 international straits which are overlapped by 12-nm territorial seas, there are some 16 major international straits which the U.S. Government has identified as being of particularly vital importance for commercial and military navigation. Of course, any international strait can be critical depending upon mission requirements. Areas of the world where navigation and overflight rights are of particular strategic importance include:

- All major international straits, but, in particular, Hormuz, Dover, Bab el Mandeb, Malacca, Singapore, and Gibraltar.

- Several key archipelagoes, especially Indonesia and the Philippines.

Ocean access to virtually all areas of the globe are of vital military and commercial interest to the United States and others and require transit rights through international straits and archipelagic waters.

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Congressman Fields: What is the U.S. Freedom of Navigation Program? How has it worked to protect U.S. interests?

Captain Schiff: The United States has maintained its navigational and overflight rights globally through an active and comprehensive Freedom of Navigation (FON) Program. First initiated in 1979 during the Carter Administration, the FON Program has been a cornerstone of our international efforts to resist excessive maritime claims and exercise our global mobility rights.

The FON Program consists of two prongs: (1) diplomatic actions; and (2) operational assertions. In the last 15 years, the United States has identified and protested the excessive maritime claims of nearly every State concerned. We have also exercised our transit rights through international straits and archipelagic sealanes, both in, above, and under the water, "freely and frequently" consistent with operational requirements. Under the FON Program, decisionmakers in Washington have pre-approved dozens of operational challenges each year to baseline, historic water, and territorial sea claims, of which 20-30 are actually undertaken. The 1988 challenge to excessive Soviet claims off the Crimean Peninsula (the so-called "Black Sea bumping incident") led to the 1989 Jackson Hole agreement by which the Soviets accepted in writing our view that the 1982 UNCLOS governs the exercise of the right of innocent passage in the territorial sea and actually changed their domestic border laws and regulations. Other well publicized examples of FON program challenges are those against Libya's excessive claims to the Gulf of Sidra.

Through the FON Program we have not been deterred by those States which would seek to limit our navigational rights and freedoms. However, sometimes the difficulty in undertaking the operation, such as challenging Libya's excessive historic bay claim, have prevented us from going where we have a right to go. In addition, the FON Program may be limited in the years ahead by budget cuts and force down-sizing -- we simply won't have adequate forces to conduct routine challenges. Moreover, these operational commitments are often constrained by various political concerns, such as the POW/MIA issue with respect to challenging the egregious baseline claims off Vietnam. And other States, which have neither our resources nor our will, often acquiesce in excessive maritime claims. As one Nigerian naval officer attending the Naval War College expressed it: "It is easy to resist excessive maritime claims when you have a carrier battle group over the horizon. My

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government cannot afford to. We simply apologize." Although the FON Program permits us to be a strong player in promoting navigational freedoms worldwide, we could do a more effective job as a Party to a universally acceptable Convention.

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Congressman Fields: What are the national security advantages to the United States in the Law of the Sea Treaty? Are there national security interests in the minerals found on the seabed? Would these interests be adequately protected by the Treaty in its current form?

Captain Schiff: All DoD studies of the navigational provisions of the Convention, whether conducted in the 1970's, 1980's, or 1990's, have concluded that it is an excellent regime for our freedoms of navigation and overflight and operational mobility. The freedoms guaranteed in the Convention contribute directly to global mobility and flexibility, cornerstones of U.S. defense strategy. The primary benefits with regard to navigation rights include the following:

- Preservation of high seas freedoms;
- Limitation of the territorial sea to 12-nm;
- Guarantee of innocent passage; an exhaustive, objective list of inappropriate activities during innocent passage; clear delineation of coastal State regulatory authority;
- Preservation of high seas freedoms in the EEZ;
- Requirement of coastal State permission for Marine Scientific Research in EEZ; freedom to conduct hydrographic and military surveys;
- Guarantee of nonsuspendable freedom of navigation and overflight through international straits under regime of transit passage in the "normal mode";
- More objective rules for establishing baselines for the measurement of maritime zones;
- Preservation of the doctrine of sovereign immunity; and
- Careful balance between coastal State jurisdiction over maritime pollution and navigational freedom.

A critical component of each of these is how they will be molded over time, primarily by parties to the Convention. If we are on the outside looking in, we will lose much of our leadership position. Although we can expect our maritime allies to try to

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protect the freedoms of navigation and overflight, there will be intense pressure by nations to mold a regime which permits coastal States to restrict navigational freedoms. The evolution of the Convention, after entry into force, could take a path inimical to U.S. interests. For example, it is quite possible that the parties to the Convention could interpret innocent passage that "security interests" permit the coastal State to impose a prior authorization or permission regime. If we were party to the Convention, we would play a dominant role in defeating any such effort; if we were outside the Convention, we would have little or no role.

In regards to whether seabed minerals are of importance to our national security, we understand that deep seabed mining has virtually no strategic value at this time. The market for these minerals is glutted and prices are low. Since I am no expert on commodities, I would defer to others for details on this question and for predictions as to the future. But I think it important to note that the critical national security issues are in the navigation and overflight provisions in the Convention; ensuring these rights and avoiding conflict vastly outweigh any potential strategic value of deep seabed mining.

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QUESTION NUMBER 6

Congressman Fields: In his testimony, Prof. Nordquist states that "[t]he majority" of coastal states will continue to demand notification for warships planning to pass through their territorial seas and straits. Is this true that a majority of coastal States demand notice? Does the U.S. comply with this requirement?

Captain Schiff: A significant number of States impose notification or approval requirements on the right of innocent passage of warships through their territorial sea. According to a 1992 State Department publication, Limits in the Seas, No. 112: United States Responses to Excessive National Maritime Claims, the United States has protested through diplomatic channels the excessive claims of at least 38 of these States. (As a result, a handful of these excessive claims have been "rolled back." On the other hand, other States have asserted excessive restrictions since then. For example, just last year the United Arab Emirates asserted such restrictions.) In addition to several developing States, notably this list includes such significant powers as China, Brazil, and Vietnam, and developed States such as Denmark, Finland, South Korea, and Sweden. Several of these States claim that since the Convention is not yet in force, they are applying their understanding of the relevant provisions of the 1958 Convention on the Territorial Sea and Contiguous Zone. The explicit understanding of many States party to the 1958 Convention was that they had a right to require prior notification or approval for warships, and certain other vessels, to engage in innocent passage. Once the Law of the Sea Convention comes into force on a near universal basis, we hope that the States involved will "roll back" their claims to comport with the Convention.

No; the United States never complies with these illegal restrictions on our operational mobility. As part of the FON Program and in furtherance of President Reagan's ocean policy statement of March 1983, we insist upon our rights as contained in the Convention. On the other hand, sometimes it is simply easier to stay out of an area than take the time to challenge it.

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Congressman Ortiz: What is the primary benefit provided by the Treaty with regard to navigation rights? Could this benefit be provided through any other means?

Captain Schiff: All DoD studies of the navigational provisions of the Convention, whether conducted in the 1970's, 1980's, or 1990's, have concluded that it is an excellent regime for freedom of navigation. The freedoms guaranteed in the Convention contribute directly to global mobility and flexibility, cornerstones of U.S. defense strategy. To answer the specific question, each of these studies agrees that the primary benefit with regard to navigation rights is transit right through international straits and archipelagic sealanes. Under traditional rules of international law, submarines and aircraft would not be permitted to travel through territorial seas in their "normal mode" without the consent of the coastal State. As a central element of the "package deal" negotiated during the Third UN Conference on the Law of the Sea, the negotiators developed the critical concept of "transit passage" (and the related concept of archipelagic sealanes passage). The benefit is to increase navigational flexibility and mobility for both military and commercial users of the world's oceans.

We have been working to ensure these benefits through regular State practice. We navigate submerged, overfly, and transit in defensive posture international straits and archipelagic sealanes "freely and frequently" throughout the world. Even so, a critical component of these critical rights is how they will be molded over time, primarily by parties to the Convention. If we are on the outside looking in, we will lose much of our leadership position. Although we can expect our maritime allies to try to protect these freedoms of navigation and overflight, there will be intense pressure from some States to mold a regime which permits coastal States to restrict navigational freedoms. Therefore, the evolution of the Convention, after entry into force, could take a path inimical to U.S. interests. Article 312 of the Convention permits it to be amended after 10 years. If we were party to the Convention, we would play a dominant role in defeating any unreasonable actions; if we were outside the Convention, we could play little or no role. Nor is the issue merely academic. With modern anti-ship missiles and mines, coastal States have the ability to interfere with our transit rights, especially in the littoral waters off their coasts. If there is a consensus that our challenges to these claims are illegal, the international community might coalesce around the restrictions of the coastal State and

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even support military actions conducted in defense of national sovereignty.

In theory, we could try to secure our navigation rights through bilateral agreements, such as the US/USSR Agreement on Innocent Passage in the Territorial Sea. In another example, the 1988 Tax Treaty with Indonesia, we agreed to recognize their archipelagic claim if they respected our right to transit sealanes as guaranteed under the UNCLOS. However, as a practical matter, such an undertaking would require hundreds of bilateral agreements involving countries throughout the world. Moreover, countries in regions of potential conflict may be unwilling to sign such agreements. For example Iran, which controls more coastline along the Arabian Gulf than any other country and which straddles the Strait of Hormuz, would be unlikely to sign such an agreement with the United States. Spain and Morocco, which have claims with respect to the Strait of Gibraltar, might exact significant political concessions. A near universal, comprehensive treaty is the best protection of our rights and the best way to avoid diplomatic and, perhaps, military conflict. The purpose of a stable internationally-recognized regime is to secure rights which survive periods of political tension. Only a broadly-based multilateral treaty can do this.

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Congressman Ortiz: To what extent has the Navy been involved with recent Treaty negotiations? Have the federal agencies (i.e., NOAA, State, and Defense) coordinated their efforts effectively with regard to Treaty negotiations?

Captain Schiff: Since recent negotiations in New York have focused on improving Part XI, the State Department and NOAA have taken the lead in the technical negotiations. The concerned agencies within the Department of Defense assured themselves, however, that only Part XI would be renegotiated. The other provisions of the Convention, particularly those dealing with navigational rights, were locked in place. Navy and DOD representatives have been closely involved in consultations with our Major Maritime Powers, including last June in Tokyo and last November in London, to coordinate our approach to the negotiations.

At the same time, the concerned agencies have worked closely within the interagency process to effectively monitor these Part XI negotiations. We have obtained and distributed for review and comments each formulation of the "Boat Paper," and several Navy and DOD representatives have attended all interagency meetings on the subject. Indeed, all Federal agencies have had full opportunity to participate in regular interagency meetings and briefings concerning the Part XI negotiations. Since DOD has such a key role to play in emphasizing the strategic importance of the Convention, we have met with congressional staffers and others on a routine basis. Under State Department leadership, we believe that the coordination process has been effective and ongoing. And we will continue to participate in these efforts.

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Congressman Ortiz: Are there currently areas of the world in which the navigation and overflight rights provided for in the Law of the Sea Treaty are of particular importance? Are there certain areas where the U.S. failure to sign the Treaty has severely limited U.S. navigation and overflight?

Captain Schiff: International straits and archipelagic waters are the most important geographical features, the choke points through which all vessels must pass. Although there are about 153 international straits which are overlapped by 12-nm territorial seas, there are only 16 major international straits which are of vital importance for commercial and military navigation. Of course, any international strait can be critical depending upon mission requirements. In addition, archipelagic waters such as the Philippines and Indonesia cover vital sea lanes of communication. Areas of the world where navigation and overflight rights are of particular importance include:

- All major international straits, but, in particular, Hormuz, Dover, Bab el Mandeb, Malacca, Singapore, and Gibraltar.
- Several key archipelagoes, especially Indonesia and the Philippines.
- Many areas where U.S. military presence requires coastal operations, including the Arabian Gulf, Red Sea, Southeast Asia, Mediterranean Sea, and the Caribbean.

The U.S. refusal to sign and become party to the Convention does not directly limit our navigation and overflight freedoms. President Reagan announced in March 1983 that we would recognize foreign claims and exercise our rights consistent with the Convention. We have done so. However, the lack of a universally acceptable Convention, coastal State claims inconsistent with the Convention, and the potential for conflict have infringed upon the mobility interests of ourselves, our allies, and other States.

As an example, Libya's 1973 declaration of historic water status in the Gulf of Sidra is clearly an illegal maritime claim. Despite Qaddafi's threat that the 32 degree 30 minutes north latitude closing line would be a "line of death," the United States has undertaken both diplomatic and operational actions to protest the claim. You will recall that on several occasions there have been military conflicts in the Gulf of Sidra over our presence there. In a practical sense, though, Libya's claim has succeeded

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since the western navies do not routinely operate in the Gulf of Sidra as they used to do. North Korea's excessive maritime claims are another example of effectively restricting normal operations. While the U.S. Navy may conduct operational challenges against these excessive claims, in the long run they can succeed unless the community of nations is unified against them. And the only realistic way to accomplish this is through a universally applicable Convention.

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Congressman Oritz: Are there any nations that, because the U.S. has not signed the Law of the Sea Convention, currently demand notification for U.S. warships planning to pass through their territorial seas and straits?

Captain Schiff: The maritime claims and other international relations of States rarely revolve around actions or inactions of the United States. This is particularly true as to whether or not we have signed the Convention. Demands for prior notification or authorization is a problem, however, not merely for the United States, but for our allies as well. However, these excessive claims are not directed specifically at the United States, and are not tied to our failure to sign the treaty.

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Congressman Ortiz: To date, has the U.S. witnessed any incremental coastal state restrictions on navigation and overflight as a result of our failure to sign the Law of the Sea Treaty?

Captain Schiff: Once again, our failure to sign the Convention is not the reason coastal States restrict navigation. States make these excessive claims because they believe it is in their national interests to do and they believe they can get away with it. Law of the sea experts call this phenomenon "creeping jurisdiction" which is resulting in the "territorialization" of the oceans. The real advantage of becoming party to the Convention is that it will enable us to assure a leadership role among the States party to roll back these excessive claims as all States conform to the norms of the Convention.

As part of this "creeping jurisdiction," a significant number of States impose notification or approval requirements on the right of innocent passage of warships through their territorial sea. According to a 1992 State Department publication, the United States has protested through diplomatic channels the excessive claims of 38 of these States. In addition to several developing States, notably this list includes such major powers as China, Brazil, and Vietnam, and developed States such as Denmark, Finland, South Korea, and Sweden. Several of these States claim that since the Convention is not yet in force, they are applying their understanding of the relevant provisions of the 1958 Convention on the Territorial Sea and Contiguous Zone. The explicit understanding of many States party to the 1958 Convention was that they had a right to require prior notification or approval for warships, and certain other vessels, to engage in innocent passage. Although there is not unanimity on the notification/approval regime under the Convention, once the Law of the Sea Convention comes into force on a near universal basis, our success at Jackson Hole leads us to hope that the States involved will respond to our efforts to "roll back" their claims to comport with the Convention.

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QUESTION NUMBER 7

Congressman Ortiz: You suggest in your testimony that some nations question or even reject the argument that the relevant provisions of the 1982 Convention reflect customary international law. Which nations in particular reject the "customary international law" argument?

Captain Schiff: Customary international law is the consistent practice of States with respect to a particular subject which has become generally recognized as a legal obligation. When such a practice has attained the level of regularity and is accompanied by the general conviction among States that they are obligated to comply, it has become an established rule of customary international law. It is developed over time through the process of claim and counterclaim, demand and response. Thus, it requires general agreement among States. All States would agree that some principles contained in the Convention, such as freedom of navigation on the high seas, is a well established principle of customary law. However, other principles, such as the extent to which a coastal State can control activities within its EEZ, is less well settled. Several States, such as Brazil and Nigeria, view the coastal State as having extensive sovereign powers to control navigation and overflight. If universally applicable, the Convention would largely resolve these outstanding issues.

If we do not become a Party, we would continue to argue that the navigational provisions of the Convention codify customary international law and bind all States. As I discussed in my testimony, however, customary international law is malleable and "fuzzy around the edges." Some nations even reject the notion of customary international law as a matter of principle. Although we believe the argument that the Convention reflects customary international law is sound, this stance may someday be more difficult to maintain if, through non-participation of major maritime powers, the Convention unravels or is amended by the States party pursuant to Article 312 without our participation. The problem of "creeping jurisdiction" is a real one, and pressures to extend coastal State control seaward continue unabated. Should any of this take place, we will be hard pressed to argue that the Convention continues to be authoritative. Excessive straight baseline and historic waters claims pose a real threat to our ability to operate in coastal areas. We need to play a leadership role in developing objective criteria for evaluating such claims. Additionally, an active FON program will become more difficult to carry out as DoD continues to down-size and we will be unable to conduct significant operational challenges of excessive claims.

COMMITTEE ON MERCHANT MARINES & FISHERIES
HEARING ON: LAW OF THE SEA TREATY & DEEP SEABED HARD MINERALS RESOURCES ACT
26 APRIL 1994
QUESTIONS FOR THE RECORD
QUESTION NUMBER 6

Congressman Ortiz: You suggest in your testimony that some nations insist that the Treaty is a legal contract, the rights and benefits of which are not available to non-parties. Which nations in particular adhere to this belief?

Captain Schiff: Iran is the only State which has documented this position officially; in signing the Convention in 1982, Iran filed a declaration stating "that only States parties to the Law of the Sea Convention shall be entitled to benefit from the contractual rights created therein." Iran cited the right of transit passage as being only available to parties. Although Iran has not yet ratified the Convention, far more important are the facts that it lies astride one of the world's most vital international straits (an "oil highway"), that it continues to assert several excessive maritime claims, and that it has or is acquiring the military means to threaten our military and commercial traffic.

Iran is the best example, but not the only one. Delegates from several other States, including Spain and China, argued a similar position. In the final session of the 1982 negotiations, Norway and Mauritius stated the view of many others that the Convention was a "package deal." Additionally, Ambassador Tommy Koh, the President of the Conference, strongly argued this position in a presentation before the Conference on 11 December 1982, the day after the Convention was opened for signature. Other countries (Indonesia during bilateral discussions and Brazil during IMO meetings) have since expressed the same sentiments. Representatives of the Major Maritime Powers (U.K., France, Germany, Japan, Russia, and the United States) have expressed concern that more States will adopt this sentiment if the United States and/or the Major Maritime Powers continue to refuse to sign, even after our stated objections to Part XI have been resolved. From an international perspective, our diplomatically stock plunged in 1982 after we refused to sign; we were seen as trying to "have our cake and eat it, too." We risk an even greater drop if we fail to become party after our concerns are seen to having been met.

COMMITTEE ON MERCHANT MARINES & FISHERIES
HEARING ON: LAW OF THE SEA TREATY & DEEP SEABED HARD MINERALS RESOURCES ACT
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QUESTIONS FOR THE RECORD
QUESTION NUMBER 7 cont.

Outside of the Convention, we will have little leverage and leadership.

Turning to your specific question, Ambassador Tommy Koh of Singapore, President of the Third UN Conference on the Law of the Sea between 1980 and 1982, expressed the view of many States in criticizing the United States for claiming that the Convention reflected customary law. When it signed the Convention in 1982, the Yemen Arab Republic declared that transit passage was not customary law: warships and warplanes must obtain permission prior to passing through or over its territorial waters, including the Bab el Mandeb. During the negotiations, the Chinese delegation noted that 56 States considered freedom of transit through straits overlapped by territorial seas "unacceptable." The Chinese government recently asserted several maritime claims inconsistent with the provisions of the Convention, asserting that the Convention was not customary law and that their actions were consistent with the 1958 Convention on the Territorial Sea and Contiguous Zone. During the Conference, Spain and Morocco rejected the "customary law" argument, arguing that prior permission should apply to submerged transits and military overflights of the Strait of Gibraltar. Other developing States which appear to take the position that many of the key navigational provisions are not customary law include Egypt, Greece, Indonesia, Malaysia, Oman, and the Philippines. Finally, some of our allies and maritime powers, such as Canada and Japan, are not willing to accept our proposition that the Convention simply codifies customary international law. Even amongst the Major Maritime Powers (Germany, Japan, U.K., France, Russia, and the United States), there is general recognition of the risk that many States would resist recognizing some of the navigational rights in the Convention with respect to States which again refuse to become Party.

Questions Submitted by Congressman Solomon Ortiz
April 26, 1994, Hearing on the Law of the Sea Treaty and
Reauthorization of the Deep Seabed Hard Mineral Resources Act

DR. MYRON NORDQUIST

1) In your opinion, how would U.S. ratification of the Law of the Sea Treaty affect DSHMRA? Would it be necessary to amend the legislation significantly?

2) Have the objections of the U.S. and other industrialized nations been addressed adequately during the negotiations on Party XI? With regard to the Treaty's decision-making process, what remaining issues need to be resolved in order for the Treaty to provide adequate influence to the United States and other industrialized nations?

3) How important/necessary is support from the U.S. ocean mining industry to U.S. ratification of the Law of the Sea Treaty? How disadvantageous would it be for the U.S. to sign the Treaty without the endorsement of the ocean mining industry?

4) Would it be possible to secure the navigation rights provided by the Treaty through other means, such as bilateral agreements with various nations?

5) Would it be possible to secure the fisheries conservation and marine environmental protection measures provided for in the Treaty through other mechanisms, such as bilateral agreements?

6) Are there any nations that, because the U.S. has not signed the Law of the Sea Convention, currently demand notification for U.S. warships planning to pass through their territorial seas and straights?

7) To your knowledge, was the Part XI negotiations process fairly inclusive of all interested parties?

8) To date, has the U.S. witnessed any incremental coastal state restrictions on navigation and overflight as a result of our failure to sign the Law of the Sea Treaty?

QUESTIONS SUBMITTED BY CONGRESSMAN JACK FIELDS
HEARING ON THE LAW OF THE SEA TREATY AND THE DEEP
SEABED HARD MINERAL RESOURCES ACT

MR. NORDQUIST

1. Have global political circumstances changed so significantly since the initial drafting of the Law of the Sea Treaty that its provisions have become outdated?

2. You argue that the Law of the Sea Treaty provisions governing fishing rights alone are enough to garner U.S. support for the Treaty. Aren't these provisions already embodied in the Magnuson Act and through international fishery agreements to which the U.S. is a party?

Responses to questions submitted by Congressman Ortiz to Dr. Myron Nordquist

1. The DSHMRA is designed to merge with the UNCLOS when the latter enters into force for the United States. There is no reason to amend the legislation significantly. Let it serve its intended purpose.

2. The objections by the United States and other industrialized nations were specifically addressed, satisfied and embodied in the "Boat Paper" during the recent negotiations on Part XI. The United States has a veto on U.N. actions under the new decision making arrangements. We can ask no more.

3. There is no U.S. deep seabed mining "industry" because deep seabed mining is not commercially viable. The fact that deep seabed mining is not profitable is due to less expensive land-based minerals and has nothing to do with the U.N. regime. There are a few individual "spokesmen" for former experimental projects that still exist on paper but have no commercial operations, budgets or even real offices. While philosophical objections to a U.N. run business are understandable, the United States cannot dictate every detail during multilateral negotiations. We got and we gave in the LOS negotiations. The decision should be on the overall deal. In weighing real world national security, fisheries and environment interests against theoretical deep seabed mining interests, there is no contest. There are few disadvantages to the United States' acceding to the Convention and Boat Paper without the endorsement of a non-existent industry. National security benefits easily are more important than deep seabed regime detriments.

4. The navigation and overflight rights guaranteed by the Convention are more in jeopardy now than they were when the straits, territorial sea and archipelogic regimes were originally negotiated. We are in an era when regional conflicts are the norm. Our prime deterrent is global mobility which is based on sailing on, flying over or navigating under salt water areas otherwise under the sovereignty of a coastal State. Attempts to negotiate bilateral agreements with the many nations involved would result in a myriad of regimes. For certain radical countries, bilateral negotiations might not even be possible. There are too many coastal nations and too much variety in individual domestic laws to negotiate bilateral agreements in each strategic area. A good international regime is vastly superior to the bilateral approach. For example, the Convention requires internationally acceptable ship construction standards that foster predictability. A series of bilateral agreements on such matters would be extremely costly and cumbersome for the United States. A bilateral regime is unworkable and ought to be out of the question when a very good international regime is available.

5. Again, bilateral fishery or marine environment agreements are inadequate. Neither migratory stocks nor ocean pollutants observe manmade boundaries in the oceans. In many cases, the marine ecosystem must be viewed as a whole. Bilateral agreements are easily altered, especially with changes in government. But in any event, half of the world's ocean area is outside national jurisdiction where bilateral agreements based on jurisdiction over nationals or flag vessels is largely ineffective.

6. Many nations have domestic laws requiring various types of notification for various types of foreign vessels and aircraft. Nations seldom attribute domestic enactments to another nation's signature or nonsignature of an agreement. LOS experts agree, however, that the majority of nations prefer notification for warships. A vote on this exact point (which the United States expected to lose) was avoided at the LOS Convention only because of the outstanding diplomatic skill and extraordinary effort exerted by the President of the Conference. Notice or even worse, authorization, could easily become the norm in the absence of an effective UNCLOS expressly ruling to the contrary. Maritime nations, while powerful, are still a small minority of the nations in the world. This is a dangerous area for reliance on "State practice."

7. Yes. Groups were consulted in a manner consistent with their relative importance to the overall national interests of the United States. Those who profess to speak for U.S. deep seabed mining interests continue to urge that they be the tail wagging the dog.

8. The conclusion from your premise does not necessarily follow. The historical evolution toward wider territorial seas has clearly abated as a direct result of the UNCLOS. Brazil, for example, backed down from a 200-mile territorial sea to an UNCLOS standard 200-mile EEZ. Many nations have coalesced around the 12-mile territorial sea in the UNCLOS, including the United States after 200 years of adherence to a 3-mile territorial sea. Thus, there is a direct link between the existence of UNCLOS provisions and widely acceptable jurisdictional assertions by nations. The UNCLOS is having a positive impact on State practice. This is good for our navigation and overflight interests. Sovereign nations do not cite the failure of the United States to sign the UNCLOS as a reason for its own sovereign actions. We are important, but not that important. At the same time, it is self-evident that our diplomats have weaker positions in protesting coastal State restrictions on navigation and overflight when they must base their case on a Convention that the United States refuses to join.

Responses to questions submitted by Congressman Fields to Mr. Nordquist

1. Your question has two parts that are not necessarily related. It is true that global political circumstances have changed significantly over the past 20 years. Today, there is not a single State where communism as an economic system is successful. Free enterprise has prevailed. In my opinion, however, the provisions in the UNCLOS pertaining to deep seabed mining were always outdated. The regulatory system reminds

me of a huge inverted Egyptian pyramid with nothing to regulate on the top, or bottom as it were. Nevertheless, the United States and other nations bargained in good faith for all the good and bad in the UNCLOS "package deal." For this very reason, the Convention itself prohibits "picking and choosing." Reservations are not permitted to the agreement. Fortunately for us, deep seabed mining is not an important interest. Why expend political capital decrying bad provisions that are basically meaningless at the expense of not achieving national security interests that are very important? The entire world knows that the United States does not endorse the grandiose regulatory scheme for the deep seabed; we have made our point and do not need to beat a dead horse any longer.

2. The UNCLOS deals specifically with fishing in half the world's ocean. The other half is beyond national jurisdiction and the Convention rules there are general in nature. The facts speak for themselves in substantiating that existing international fishery agreements are woefully inadequate. The world's marine fish catch peaked in 1989 and is falling fast, both in quality and quantity. Global fishing capacity has grown twice as fast as global catch. Part of the tragedy is that the poorest two-thirds of the world's people get about 40% of their protein from fish. Hunger leads to conflicts and, recently, U.S. engagement. Unlike manganese nodules, fish need more international regulation beyond national jurisdiction. The logical foundation for more effective regional or global fishery agreements is the UNCLOS. Indeed, as illustrated by the recent negotiations on straddling stocks and highly migratory species, the UNCLOS is the only legal springboard for the international regulation that is so desperately overdue for high seas fisheries.

OCEANOGRAPHY
OLD DOMINION UNIVERSITY

Department of Oceanography
Old Dominion University
Norfolk, Virginia 23529-0276
(804) 683-4285
Fax (804) 683-5303

15 June 1994

Solomon P. Ortiz, Chairman
Subcommittee on Oceanography, Gulf of Mexico, and the
Outer Continental Shelf
Committee on Merchant Marine and Fisheries
Room 1334, Longworth House Office Building
Washington, D.C. 20515-6230

Dear Chairman Ortiz:

It was my pleasure to testify at the hearing on 19 April, 1994. I will follow with great interest further proceedings on the Deep Seabed Hard Mineral Resources Act. Please find enclosed responses to your follow-up written questions, as well as those of Congressman Fields. These answers are jointly submitted by me and my senior colleague, Prof. Craig Smith of the University of Hawaii.

Answers to questions submitted by Congressman Solomon Ortiz to Dr. Fred Dobbs:

1) OMED's research is focusing unduly on short-term goals and engineering (e.g., production of a mining simulator) as opposed to addressing the most pressing ecological questions via a series of well-controlled experiments. As mentioned in the statement, the current OMED experiment (BIE-II) has some serious shortcomings (unconstrained deposition thickness, limited ecological scope) that will limit its value to regulatory decision making (i.e., it will fail by a long shot to provide all the needed information). Experiments to explicitly address dose-response functions for acute and chronic deposition, recolonization following disturbance of a range of spatial scales, and simple resampling of old test-mining tracks (from 15 years ago) should be receiving higher priority; these studies could all be conducted via submersible using existing technology (ALVIN, SEA CLIFF, the Russian MIR submersibles, SHINKAI 6500, etc.). As a final note, the management style of mining impact studies within OMED has been extremely closed, ultimately leading to the program's detriment. Even scientists actively involved in the research have not been kept informed of management's view of priorities, future research directions, or collaborations with other national research efforts.

2) An appropriate program would involve three to five research projects per year at ca. $100,000 each per year, plus 35 days of ship time per year ($15,000 x 35 = ca. $500,000). Thus, an annual funding level of $800,000-$1,000,000 would be required.

3) It is still not clear what questions the other national programs will address in their impact research programs, although the work seems to be modeled on OMED's BIE-II experiment (according to Dr. Erdogan Ozturgut). There appears, however, to have been little discussion between U.S. and foreign deep-sea ecologists in the design of collaborative efforts.

4) Except possibly for NURP, it seems very unlikely that other agencies will fund deep-seabed research because it is quite applied, and does not fit into agency missions (e.g., that of ONR).

5) Completion of OMED's current efforts will not occur, apparently, without additional funding. The information already collected will be of limited value to predictions of mining impacts.

6) The new NSF BIOMAR initiative may address some of the fundamental diversity issues, but is unlikely to focus on the nodule-mining areas, or nodule-dwelling fauna, due to logistical problems. (Nodule areas are not the best locales to address fundamental questions.) Specific information from the mining areas is needed to make impact predictions.

7) Scientific guidance could be achieved by setting up a 3-5 person, blue-chip, scientific steering committee that meets approximately once year to identify major research question and goals, write proposal solicitations, and select proposals for funding (based in part on peer reviews solicited by OMED, or the Sea Grant administrative structure). The only extra costs would be travel for the committee and perhaps a small amount of funding for consulting fees to compensate committee members for time invested.

Answers to questions submitted by Congressman Jack Fields to Dr. Fred Dobbs:

1) The best way to ensure that NOAA environmental impacts studies for seabed mining produce useful information is via: (a) scientific oversight of the program by non-NOAA scientists to establish research directions and select proposal for funding; (b) open solicitation and rigorous peer review of proposals; (c) encouragement of timely publication of results in peer reviewed journals (such encouragement is rigorously built into the system for evaluating university scientists; it may not be for researchers working within NOAA).

2) The design of the environmental impact studies of Germany are well known; this work will provide useful information, but also leaves many gaps, particularly with regard to quantifying dose-response functions of deep-sea benthos to resedimentation. The Japanese, Chinese and Russian efforts are not well known to US scientists; all interactions and collaborations seem to be limited to NOAA program managers. Thus the quality of information to be generated by these foreign efforts, and the likelihood of general availability, are difficult for the US scientific community to assess.

3) Any existing panels probably would be unwilling to take on the complex issues facing environmental impact studies, and would lack the necessary authority to make recommendations stick. I suspect that for $10,000 - $20,000 per year (a few percent of NOAA's environmental impact budget) a 3-person steering committee that meets once a year to provide guidance could be set up. Using a few percent of the budget to obtain scientifically sound management would be an excellent investment. In view of the widespread participation of university scientists in the occasional mining-impact workshops NOAA does sponsor, I suspect there would be little difficulty finding well-qualified scientists willing to serve on the committee. In addition, such a steering committee might better be viewed as a means for circumventing an existing, unscientific bureaucracy (and its arbitrary decisions), rather than just another bureaucratic layer.

Respectfully submitted,

Fred C. Dobbs
Assistant Professor
Department of Oceanography
Old Dominion University
1054 W. 47th Street
Norfolk, VA 23529-0276

Craig R. Smith
Professor
Department of Oceanography
University of Hawaii
1000 Pope Road
Honolulu, HI 96822

OCEAN MINING ASSOCIATES

Box 1347 • Gloucester Point, VA. 23062 (804) 642-2121 • Fax (804) 642-2123

27 May 1994

The Honorable Solomon P. Ortiz, Chairman
Subcommittee on Oceanography, etc.
Committee on Merchant Marine and Fisheries
U. S. House of Representatives
Longworth House Office Building, Room 1334
Washington, DC 20515-6230

Dear Mr. Chairman:

Mr. Brian J. Hoyle and the US deep ocean mining licensees wish to provide the following answers to the questions submitted by you and Congressman Fields to Mr. Hoyle after the hearings on the Law of the Sea Treaty and Reauthorization of the Deep Seabed Hard Mineral Resources Act held on 19 April 1994.

We thank you for your interest in these issues.

Cordially,

Richard J. Greenwald
President

cc: B. Hoyle
L. Messulam - OMI
C. Welling - OMCO
K. Jugel - NOAA
W. Scholz - DOS

attch:

QUESTIONS FROM CONGRESSMAN ORTIZ

1.A IF THE UNITED STATES SIGNS THE LOS TREATY, WILL THE US MINING INDUSTRY ABANDON ITS EXISTING VENTURES?

ANSWER: Yes. The US deep ocean mining licensees, having expended collectively over $500,000,000 in the years 1962 to date in prospecting and exploring for, and developing the means to mine, deep seabed hard mineral resources, see no future for private investment (regardless of national origin) in deep ocean mining under Part XI of the LOS treaty as interpreted by the "Boat Paper", formally known as the Draft Agreement on Matters Relating to Implementation of United Nations Convention on the Law of the Sea, dated 15 April 1994. If the US does accede to the LOS treaty in that form, the US licensees, as prudent managers, would try to retrieve some portion of past expenditures by seeking foreign buyers with public (i.e. taxpayer) funds to invest in ocean mining. Failing that, they would abandon their interest in the licensed sites altogether.

1.B CAN THE US BE A PARTY TO THE TREATY WITHOUT THE SUPPORT OF US INDUSTRY?

ANSWER: Only the Clinton Administration and the US Senate know the answer to this question. The US ocean mining industry will continue to advise the State Department of its opposition to the LOS treaty as interpreted by the Boat Paper and will petition the Senate not give its advice and consent if the Administration seeks to accede to the treaty. Recalling past opposition to the treaty by the American Mining Congress, the American Petroleum Institute, the National Association of Manufacturers, the US Chamber of Commerce and many other national organizations, it is also likely that other segments of US industry will again note the adverse terms and precedential effects of the treaty and urge rejection by the US government. However, in a world in which the US Administration continues to enforce an arms embargo against a UN member country which is the victim of outside aggression, anything is possible, even pursuing a fatally flawed treaty to obtain rights already enshrined in generally accepted principles of customary international law.

2. CAN US INDUSTRY SUCCESSFULLY MINE INTERNATIONAL SEABEDS WITHOUT THE PROTECTION OF THE US GOVERNMENT?

ANSWER: It is not clear what is intended by the phrase "without the protection of the US government". The American mining industry lobbied hard and long for the Deep Seabed Hard Minerals Act of 1980, which sets forth our rights and obligations together with the powers, responsibilities and protections of the US government. We are deeply satisfied with that law and its subsequent implementation, including the protections provided by NOAA and the Department of State in the process of settling overlapping minesite claims with foreign entities. However, largely on the early initiative of the US Government, a

highly complex, unreasonably discretionary and commercially non-viable international treaty regime and machinery has been designed under strong G-77 influence which seeks to eliminate our rights and protections under DSHMRA. This treaty regime would create an International Seabed Authority and clothe it with the power to compete with, regulate, police, and tax privately financed ocean miners, while denying private investors (or the US government) due process as to the actions or inactions of the international bureaucracy, which functions in total absence of a body of administrative law or procedure. As things stand now, in addition to the protections embodied in DSHMRA, US industry needs US government protection from the sad results of past US Government diplomacy.

3. HOW IMPORTANT WILL IT BE FOR THE US TO HAVE ACCESS TO ALTERNATIVE SOURCES OF COPPER, NICKEL, COBALT AND MANGANESE IN THE FUTURE?

ANSWER: Of the four metals referred to in the question, nickel and cobalt are the two most likely to trigger the economic feasibility of deep ocean mining. In the case of both nickel and cobalt, the US relies almost exclusively on importation to satisfy the domestic consumption of these metals. An alternative ocean-based source for these metals, produced by US entities, would be important (a) for its positive effect on the Nation's balance of trade, and (b) as a buffer against such dramatic domestic effects on supply and price as were caused recently by economic turmoil in the territories of the former Soviet Union and political instability in a cobalt-producing country in Central Africa.

4. WHAT ECONOMIC, TECHNOLOGICAL AND POLITICAL FACTORS NEED TO BE IN PLACE FOR DEEP SEABED MINING TO BECOME COMMERCIALLY VIABLE?

ANSWER: From an economic viewpoint, the feasibility of ocean mining seeks a point where lower-cost land-based producers cannot satisfy demand. To achieve this state, a significant recovery in metals demand and price is required, particularly in the case of nickel. As a commodity traded on the London Metal Exchange, nickel can only be expected to show price improvement when the overall picture of supply and demand balance leads to such improvement. From a technological viewpoint, the fundamental technology exists and has been extensively tested and demonstrated in the mid-ocean environment. What are needed are engineering refinements related to site-specific applications and long-term reliabilities. From a legal point of view, what is needed is a legal regime offering assured access, security of tenure, and "competitive" fiscal requirements and administrative burdens. From a political viewpoint, what is needed is insulation from the misguided social controls, time-insensitive decision-making processes and unreasonable costs of the LOS Treaty. To eliminate these would require rejection of the so-called Enterprise and other socialist residues of the otherwise defunct New International Economic Order still remaining in the treaty.

5. WHAT MINIMUM CONDITIONS ARE NECESSARY FOR INDUSTRY TO BECOME A VIABLE PART OF A DEEP SEABED MINING REGIME UNDER THE LOS TREATY? IN

PARTICULAR, WITH REGARD TO THE TREATY'S DECISION-MAKING PROCESS, WHAT REMAINING ISSUES NEED TO BE RESOLVED IN ORDER FOR THE TREATY TO PROVIDE ADEQUATE INFLUENCE TO THE US AND OTHER INDUSTRIALIZED NATIONS?

ANSWER: See the preceding answer. As a footnote, the treaty's decision-making process, in and of itself, is certainly not the major source of our inability to find the treaty acceptable as a regime and machinery under which commercial ocean mining can take place. In fact, a major problem with the negotiations that culminated in the Boat Paper was the notion that any problems with basic provisions in Part XI could be addressed somehow by changes in the decision-making process to ensure veto power, blocking powers, etc. Such powers guarantee stalemate only. They do not assure that commercial operations may proceed under market-oriented principles as soon as market conditions justify. In the LOS treaty negotiating process over the last three decades, the US ocean miners have continued (consistently and unsuccessfully) to advocate that the LOS treaty contain adequate provisions for "due process", since the bureaucracy designed to staff the proposed International Seabed Authority, and its organs, is clothed with such uncommonly broad discretionary authority. We note that the treaty, as interpreted by the Boat Paper, continues to lack any body of administrative law or procedure that would provide due process (in the way of a forum and legal standing) to enable a private applicant to question or challenge any arbitrary exercise of discretion by the International Seabed Authority or any of its organs. Indeed, States Parties themselves have little or no ability to challenge a discretionary act of the Authority or its organs. From the perspective of a privately-financed ocean miner, perhaps the single most objectionable feature in the treaty is the Enterprise and its analogy, forced joint ventures with non-contributing LDC's. These concepts may be the most fundamental barrier to all other possibilities in Part XI of the treaty. The world of mining offers no known parallel to the treaty's concept that the International Seabed Authority can require that competitors of its mining arm (the Enterprise) to "tithe" a mine site and related exploration data to the Enterprise or a LDC joint venture, explore said donated area on request, and train Enterprise/LDC personnel.

6. YOU NOTE IN YOUR TESTIMONY THAT NO INDUSTRY OR GOVERNMENT OUTSIDE THE US HAS SUCCESSFULLY TESTED COMMERCIAL DESIGNS FOR MINERS AT SEA. ARE ANY OTHER COUNTRIES OR INDUSTRIES FROM OTHER COUNTRIES CLOSE TO ACCOMPLISHING THIS?

ANSWER: We think not. In the late 1970s, each present US licensee conducted tests and demonstrations of its integrated mining systems at approximately 1/5 scale at or near its licensed area in the C-C Zone. Each of these tests followed many smaller-scale tests, first on land and then in progressively deeper water, and proved the ability to maneuver the ship or miner so as to collect nodules effectively and efficiently from the deep seabed at the site of intended commercial operations and to deliver them in continuous flow to the mining ship. In the intervening 15 years, no foreign ocean mining interest has done

this, although several have announced plans to test certain isolated subsystems at full depth in future.

7. YOU NOTE IN YOUR TESTIMONY THAT PART XI NEGOTIATIONS HAVE BEEN CONDUCTED WITH VERY LITTLE INTERAGENCY OR INDUSTRY PARTICIPATION. COULD YOU PLEASE EXPAND UPON THIS POINT? THAT IS, WERE THERE SPECIFIC INSTANCES WHEN INDUSTRY ATTEMPTED TO PARTICIPATE AND WAS DENIED THE OPPORTUNITY TO DO SO?

ANSWER: US participation in the UN negotiating process leading to the Boat Paper has been very narrow. To our knowledge only representatives of the Departments of State and Commerce have participated for the US. There has been no formal mechanism of consultations with affected interests. We have received only briefings after the fact of each negotiating session over the past three years. Our comments, beginning with our letters to the Secretaries of State, Commerce, Defense and Treasury in August 1992 have been virtually disregarded. Requests for meetings with the interagency group making policy for the negotiations have been met with resistance. We were told that it was not possible for the industry to meet with the interagency group unless the meeting was opened to all interest groups and, therefore, the State Department did not consider such a meeting profitable. This is not the way business has been conducted in the US over the twenty-five years of UN Law of the Sea negotiations relating to the 1982 Convention. It has been the policy of at least the past five administrations that US delegations to international conferences and negotiations have advisors from the non-governmental interests that would be affected by the negotiations. The US delegation to the UN process related to the Boat Paper contained no non-governmental personnel. Other seabed mining countries participating in the negotiations had seabed mining industry advisors on their delegations. Our advice to US negotiators has been consistently rebuffed. Each comment has been brushed off with "It's not negotiable. You guys had better get on the train because its leaving the station." This comment has been consistently made to us despite our telling the State Department that their description of the only possible destination was one to which we cannot go. We recently discovered that our written comments to the State Department dated 15 March 1994 and entitled "The Views of the United States Ocean Mining Licensees on Trends in the negotiations to Make the United Nations Convention on Law of the Sea of 1982 Universally Acceptable" were not circulated by the US negotiators to other members of the Department of State, much less to other interested members of the Administration. Therefore, most Administration personnel are unaware of our very real concerns. The problem seems to stem from the lack of a normal Interagency consultation process on these negotiations. It would almost seem that the negotiators have their own agenda and do not want to consult with other agencies or affected interests.

8. IN THE VIEW OF THE OCEAN MINING INDUSTRY, HOW SOON WILL THE DEMAND FOR NICKEL BE SIGNIFICANT ENOUGH TO MAKE OCEAN MINING COMMERCIALLY VIABLE?

ANSWER: As noted in the answer to question * 4, above, the economic feasibility of deep ocean mining will depend on a variety of interrelated factors primarily associated with the nickel and cobalt markets but also influenced by the markets in manganese, copper and other industrial metals and materials. These factors include future demand and price and the percentage of that demand that can be satisfied by lower-cost land-based producers. In this uncertain day and age, it is virtually impossible to forecast political or military events more than 6 months into the future. Similarly, in the mining industry we have no past history which applies to current economic conditions and can be used as a guide into the future. Everything is new including, unfortunately, record lows in prices. Accordingly, it is impossible to predict when the markets will recover. However, it is improbable that they will not recover. Thus, it is only a matter of time, but the current inability to predict broader economic trends precludes any forecast of the date when ocean mining will become feasible.

9. HAVE THE US OCEAN MINING COMPANIES CONSIDERED EXPLORING AREAS OTHER THAN THE CLARION-CLIPPERTON FRACTURE ZONE FOR POTENTIAL MINING ACTIVITIES?

ANSWER: In the 1960s and 1970s US ocean mining companies prospected many areas of the world's oceans and seas, including the C-C Zone, in the search for commercially interesting hard mineral resources. Efforts extended to the US continental shelf (eg: the Blake Plateau off the Southeast Atlantic states; the seamounts off the Northwest Pacific states), the deep seabeds off Ecuador and Peru, New Zealand and other South Pacific islands, the Abyssal plains of the Indian Ocean, etc. In each US company's case, comparative studies of the prospecting data focussed exploration efforts into the C-C Zone. These decisions were subsequently vindicated by the choice of the C-C Zone by all subsequent foreign deep ocean mining entrants but India. India, which has concentrated effort in the Indian Ocean, apparently based its decision more on factors related to regional politics, local logistics and support from India's Antarctic program than on the relative abundance of seabed minerals.

10. IN YOUR OPINION, HOW WOULD US RATIFICATION OF THE LOS TREATY AFFECT DSHMRA? WOULD IT BE NECESSARY TO AMEND THE LEGISLATION SIGNIFICANTLY?

ANSWER: If the US were to accede to and later ratify the LOS treaty, the significance of DSHMRA would be reduced to providing a vehicle for funding US government activities relating to the treaty. Under US law, all inconsistencies between the treaty and DSHMRA would be resolved in favor of the treaty. The fact is that all significant DSHMRA provisions affecting the ocean mining licensees and other potential US ocean miners would be superseded by the provisions in Part XI of the treaty.

QUESTIONS FROM CONGRESSMAN FIELDS

1. GIVEN NOAA'S LACK OF SUPPORT FOR THE DEEP SEABED HARD MINERAL RESOURCES ACT, WOULD YOU SUPPORT TRANSFERRING THE AUTHORITY FOR THE PROGRAM TO ANOTHER AGENCY? IF SO, WHICH ONE?

ANSWER: We must make it clear that NOAA's lack of support for DSHMRA is a recent phenomenon evident only at NOAA's political levels, and is directly traceable to the failed policy initiatives of a long-departed and unlamented political appointee from a previous administration. In spite of deliberate ignorance, confusion and obfuscation at NOAA's political levels, the people at NOAA's working levels have always given, and continue to try to give, unstinting and effective support to DSHMRA and the NOAA ocean mining program and licensees. Much expertise in administration of marine hard mineral affairs and associated environmental research programs exists in NOAA, and should stay there. The Department of the Interior is not a logical or viable alternative agency. The deep seabeds are not within US Public Lands or the US Exclusive Economic Zone, and Interior has neither the mandate nor the funding for a deep seabed mining program. In addition, Interior's Minerals Management Service has neither experience with nor tolerance for non-lease DSHMRA-type minerals regimes.

2. DO YOU BELIEVE THAT THE PARENT COMPANIES OF THE SEABED MINING CONSORTIA, SUCH AS US STEEL, LOCKHEED AND STANDARD OIL, WOULD RECOMMEND THAT THE US SIGN THE LOS TREATY IN ITS PRESENT FORM?

ANSWER: No parent company has ever indicated the slightest intention to urge US signature. Representatives of the parent companies of each licensee have recommended that each licensee not operate under the LOS Treaty in its present form. This is the basis for the unanimous industry position opposing the LOS treaty with Part XI as interpreted by the Boat Paper.

3. WHAT IS THE HISTORY OF INVESTMENT BY THE CURRENT LICENSE HOLDERS UNDER THE DEEP SEABED HARD MINERAL RESOURCES ACT DURING THE LAST FIVE YEARS? WHAT IS THEIR PROPOSED INVESTMENT OVER THE NEXT 5-10 YEARS, ASSUMING THE US DOES NOT SIGN THE LOS TREATY, AS MODIFIED BY THE BOAT PAPER?

ANSWER: The NOAA licensees reported actual expenditures in the last five "NOAA license years" as follows: 1989 - $464,000; 1990 - $505,000; 1991 - $316,000; 1992 - $286,000; 1993 - $214,000. These steadily declining expenditures reflected a period of increasingly deteriorating metals markets. For the years in the immediate future, exploration plans also have been forced to reflect deteriorating diplomatic conditions. Accordingly, the three approved licensed plans and the one license application list estimated expenditures for the next four license years at an annual rate of about $200,000, with projected expenditures in each of license years 1998 and 1999 (the final two years of the license terms) ranging from $200,000 to $4,000,000, depending on then-

current conditions. Should markets improve in a diplomatic environment that doesn't deteriorate during those years, the expenditures may significantly exceed the estimated amounts. On the other hand, should the US accede to the Law of the Sea treaty as interpreted by the Boat Paper, future expenditures surely will surely terminate, regardless of any improvement in market conditions.

4. HOW WILL THE COMING INTO FORCE OF THE LOS TREATY WITH ITS SEABED MINING PROVISIONS AFFECT THE LEGAL CERTAINTY OF THE CLAIMS OF THE US SEABED MINERS? DOES THIS CERTAINTY INCREASE IF THE US SIGNS THE TREATY AS AMENDED BY THE BOAT PAPER?

ANSWER: Providing the US does not accede to the LOS treaty, the US ocean mining licensees are not concerned about any effect of the coming into force of the treaty on their licenses or the certainty of their rights, since all equitable claims to the licensed areas of the US licensees have been eliminated by intergovernmental agreements. On the other hand, if the US administration were to accede to the treaty as amended by the Boat Paper, and the Senate were to delay or deny its advice and consent to ratification, our uncertainty would increase to an unsupportable level because the threat of US ratification would hang over us like the Sword of Damocles. If the US administration were to accede to the treaty, and the Senate were to give its advice and consent to ratification, then the coming into force of the treaty would eliminate all meaningful rights of the licensees under the Deep Seabed Hard Minerals Resources Act of 1980. Since no licensee will operate under the treaty as interpreted by the Boat Paper, all rights and potentials of the licensees would be extinguished and they, as prudent managers, would try to retrieve some portion of past expenditures by seeking foreign buyers with taxpayer funds to invest in ocean mining. Failing that, they would abandon their ocean mining programs and technologies altogether.

OCEAN ADVOCATES
a voice for the silent sea

May 30, 1994

The Honorable Solomon P. Ortiz
Chairman
Subcommittee on Oceanography,
Gulf of Mexico, and the
Outer Continental Shelf

Dear Congressman Ortiz:

The attached constitutes my response to the additional questions posed by you and Mr. Fields as follow-up to the April 26, 1994 hearing on the Law of the Sea Treaty and the reauthorization of the Deep Seabed Hard Minerals Resources Act.

I am available to answer any further questions you or any other member of the Subcommittee might have.

Sincerely,

Sally Ann Lentz
Co-Director and
General Counsel

Blair Station Box 1073, Silver Spring, MD 20910
Columbia Office: 6424 Misty Top Pass, Columbia, MD 21044
TEL: 301-972-8849 FAX: 410-5315237

Response of Sally Ann Lentz
to Questions Submitted By Congressman Solomon Ortiz
April 26, 1994, Hearing on the Law of the Sea Treaty and
Reauthorization of the Deep Seabed Hard Mineral Resources Act

1) In your opinion, what type of impact would a failure to reauthorize DSHMRA have on current environmental impact studies?

If DSHMRA were not reauthorized, current environmental impact studies on deep seabed mining would probably be terminated for lack of funding.

2) Would it be possible to secure the fisheries conservation and marine environmental protection measures provided for in the Treaty through other mechanisms, such as bilateral agreements?

While it would certainly be possible to secure fisheries conservation and marine environmental protection measures such as those provided for in the Treaty through other mechanisms, the likelihood of achieving uniformity through bilateral agreements is low. A better approach would be to participate in issue-specific international agreements which are currently used to regulate pollution from ships, ocean dumping, and protection of endangered species.

As noted in my testimony, however, the adoption of an internationally endorsed Law of the Sea Convention promotes comprehensive and effective management of ocean issues by the world community. The ocean knows no boundaries. International cooperation in managing and protecting the resources of the sea is necessary to ensure protection of both national and international interests. In addition to codifying what already was perceived as customary international law, the LOS Treaty establishes norms with regard to a wide range of marine public policy issues, including the establishment of rights with respect to navigation and fisheries, as well as important obligations to protect the marine environment and conserve marine living species.

In addition, the policies and principles embodied in the Law of the Sea Convention are already or will over time be considered customary international law, lending substantial strength to the effectiveness of those measures. Principles or measures adopted through bilateral agreements are less likely to take on the status of customary international law until they are widely applied.

Further, as noted in the testimony presented by Captain Schiff, there are a number of legal pitfalls associated with relying solely on customary international law to protect national

interests. The establishment of bilateral agreements to secure necessary protection for an area that encompasses over 70% of the earth on a myriad of issues is simply impractical. Once the Law of the Sea Convention enters into force, the issue-specific international agreements will be carried forward under the umbrella of the LOS Convention. Being outside the LOS Convention is likely to impede the effectiveness of U.S. delegations in negotiating in the context of those issue-specific treaties.

3) In your testimony, you suggest that DSHMRA should be amended to include a mandate for deep ocean ecology research. Can you foresee other ways in which DSHMRA should be amended, especially if the U.S. ratifies the Law of the Sea Treaty?

The effect of U.S. ratification of the Law of the Sea Treaty on amendments to DSHMRA will depend largely on the final outcome of the negotiations on Part XI.

4) In your opinion, could deep seabed mining research be carried out more efficiently through a peer-reviewed proposal system, rather than through the current program at NOAA?

The benefit of a peer-reviewed proposal system over the current program for environmental research at NOAA is not necessarily increased efficiency. Rather, such an approach would bring greater objectivity and technical scientific expertise (and consequent credibility) to the process. Whether the environmental community would endorse such an approach would depend upon the particulars of the system (e.g., how participants are selected, how their recommendations are accounted for by NOAA).

5) In your testimony, you suggest that basic environmental research should lead the development of engineering technologies for mining. Have you contacted officials from the ocean mining industry regarding the relationship between the precautionary approach and the development of mining technologies?

It is only within the past six months that the precautionary approach has been introduced in the debate on deep seabed mining. While I have not met directly with ocean mining industry representatives to discuss the relationship between the precautionary approach and the development of mining technologies, I have raised the issue in a number of forums attended by industry. The initial response to the precautionary approach has been one of strong resistance. The basic technological approach for recovery of nodules from the seafloor has not changed substantially in the past ten years. Industry appears to be heavily invested in the technology as it stands and it is therefore not surprising that there would be little interest in a concept that might lead to major changes in the basic approach.

6) To your knowledge, did the negotiations process regarding Part XI of the Law of the Sea Treaty fairly include all interested parties?

To the best of my knowledge, the negotiations process regarding Part XI of the Law of the Sea Treaty did not include any of the interested parties outside of government. While my organization was not contacted directly by the State Department, it is possible that others in the environmental community were consulted informally. However, I am not aware of specific instances where this was the case.

Response of Sally Ann Lentz
to Questions Submitted By Congressman Jack Fields
April 26, 1994, Hearing on the Law of the Sea Treaty and
Reauthorization of the Deep Seabed Hard Mineral Resources Act

1) You propose in your testimony that seabed miners should pay for environmental assessment studies of their proposed activities. Are there other environmental laws which impose such requirements on land-based miners?

This question falls outside my area of expertise. I will seek to provide you with a response after appropriate consultation with others in the environmental community who can better answer this question.

2) Under the Law of the Sea Treaty, who would be required to conduct environmental assessment work? Would this work be open to public review? How would it be funded?

Under the Draft Agreement Relating to Implementation of Part XI, it appears that responsibility for conducting environmental assessment work falls on the "applicant," whether that be a State or other entity. It also appears that funding of this work would be the responsibility of the applicant. However, the programme for oceanographic and baseline environmental studies must be developed in accordance with rules, regulations and procedures to be adopted by the Authority. The extent to which this work will be open to public review will likely be addressed in the Authority's regulations.

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(d) the fishing patterns and practices of each new participant and their prior contribution, if any, to conservation and management of the stock(s), to the collection and provision of accurate data and to the conduct of scientific research on the stock(s);

(e) the special requirements of developing States from the region or subregion, particularly where they are culturally and/or economically dependent on marine resources.

22. In giving effect to their duty to cooperate by participating in the work of the subregional or regional fisheries management organization or arrangement, States shall:

(a) ensure that data collection and processing adequately meet scientific assessment requirements and support management objectives;

(b) compile and submit the catch, effort and other relevant data referred to in annex 1 within an agreed format and time-frame;

(c) develop and share new resource assessment methodologies, management models and other analytical techniques;

(d) cooperate in the conduct of scientific research, including assessment of stock(s);

(e) ensure the full cooperation of their relevant national agencies and industries in the agreed work of the subregional or regional fisheries management organization or arrangement.

23. Subregional and regional fisheries management organizations or arrangements shall be transparent in their decision-making and other activities. Representatives from other intergovernmental organizations and non-governmental organizations concerned with straddling fish stocks and highly migratory fish stocks shall be afforded the opportunity to participate in meetings of such bodies as observers or otherwise, as appropriate, in accordance with the terms and conditions for participation agreed upon by the regional organization concerned.

V. COMPLIANCE WITH AND ENFORCEMENT OF HIGH SEAS FISHERIES CONSERVATION AND MANAGEMENT MEASURES

A. Duties of the flag State

24. Conservation and management measures for straddling fish stocks and highly migratory fish stocks must be effectively applied. To this end, flag States whose vessels fish on the high seas for straddling fish stocks and highly migratory fish stocks shall take the necessary measures to ensure that vessels entitled to fly their flag comply with applicable conservation and management measures. Measures to be taken by the flag State in respect of vessels entitled to fly its flag shall include an effective combination of the following:

(a) monitoring, control and surveillance of such vessels, their fishing operations and related activities;

(b) control of such vessels on the high seas by means of fishing licences, authorizations or permits, in accordance with applicable procedures agreed on at a subregional, regional or global level, if any, including:

(i) national legislation to prohibit fishing, on the high seas and in areas under the national jurisdiction of other States, by vessels that are not duly licensed or authorized to fish, or fishing by such vessels otherwise than in accordance with the conditions of a licence, authorization or permit;

(ii) requirements that vessels fishing on the high seas must carry the licence, authorization or permit on board the vessel at all times and must produce such licence, authorization or permit on demand for inspection by a duly authorized person;

(iii) requirements that the terms, conditions and other information contained in a licence, authorization or permit are sufficient to fulfil any subregional, regional or global obligations of the flag State;

(iv) requirements that vessels fishing on the high seas refrain from activities which undermine the effectiveness of conservation and management measures;

(c) implementation of quotas and any other control measures adopted in accordance with subregional or regional arrangements;

(d) establishment of a national record of fishing vessels incorporating information on such vessels authorized to fish on the high seas and such measures as may be necessary to ensure that all such vessels are entered in that record;

(e) provision of information required to be entered into international records or regional registers, as agreed, of vessels fishing or authorized to fish on the high seas;

(f) requirements for marking of fishing vessels and fishing gear for identification in accordance with uniform and internationally recognizable vessel and gear marking systems such as the Food and Agriculture Organization of the United Nations (FAO) Standard Specifications for the Marking and Identification of Fishing Vessels;

(g) requirements for catch verification (target and non-target species) through agreed observer programmes, inspection schemes, unloading reports, supervision of transshipment and monitoring of landed catches and market statistics;

(h) requirements for regular reporting of position, catch and effort information;